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Remarks on Amputation. By JAMES SYME, M. R. C. S. &c.

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WHEN we consider the thickness and acute sensibility of the parts necessarily divided in the amputation of a limb, together with the size and number of blood-vessels cut across, as well as the extent and complicated nature of the resulting wound, it seems wonderful that any operation in surgery should be undertaken without more care or preparation. Yet the fact is, that while few surgeons venture on extracting the cataract, extirpating tonsils, opening the trachea, and other operations of little magnitude but dangerous execution, every tyro in our profession looks upon himself as fully qualified to dismember his fellow-creatures.

The explanation of this, at first sight, very unaccountable circumstance is to be found, I believe, in the common idea, that as soon as the wound inflicted by an operation is dressed and the patient has been put to bed, all the surgeon's responsibility is at an end; and that though he may claim the merit of success, Nature must bear the blame of all secondary bad consequences. For every surgeon who is not very expert will, as long as this opinion maintains its ground, naturally dread and avoid those operations which may be attended with bad or even fatal effects, owing to hemorrhage or injury of vital organs, before the patient is off the table, while he undertakes, without hesitation, those that cannot bring him into discredit by proving destructive, until what is considered the period of his own re-

sponsibility has elapsed, and Nature shall have become answerable for the result.

Of all such operations, there is no one performed with more safety, in the first instance, than amputation. Since there are here no parts essential to life which can be injured, and hemorrhage may be effectually restrained by the hard screwed tourniquet. It is accordingly, as I have said before, never declined even by the most ignorant practitioners; and students of surgery, who are well aware of this fact, which, with the candour and inexperience of youth, they attribute to the small share of dexterity required on the occasion, bestow very little of their attention on what is believed to be so simple a matter.

But it appears to me that, in the performance of every operation, the duty of the surgeon extends somewhat beyond merely removing the disease which renders his interference necessary, since, besides doing this safely and effectually, he ought, as I think, to make some allowance for Nature's share of the labour, and be very careful not to injure the remaining sound parts farther than is absolutely necessary.

Indeed I am quite satisfied, that nothing would tend so much to the general improvement of surgical practice, as a common understanding that average success is the surest criterion of operative skill; and that though the surgeon may justly feel pride and satisfaction when his efforts are successful, he must be contented to share the blame which is at present so liberally heaped on Nature when the result is different.

But of all operations, it is particularly to be desired that this way of thinking should obtain relative to amputation, where the happiness or misery, indeed the existence, of the patient depend so much upon the manner in which the soft parts are divided and left for reunion.

Unless the different parts of the stump be properly proportioned to each other, the worst consequences must follow, not only during the cure, but even if that should be completed, throughout the whole after life. For comfort requires something more than a covering of skin over the face of the stump, and demands that the bone should be well protected with flesh, which may form a soft elastic cushion sufficient to guard against the bad effects of cold, and prevent concussion from external violence, so as to supply the place of that curious mechanism which Nature has contrived for the same purpose, and placed in the articulations of the numerous bones composing the extremities. Moreover, if the very dissimilar tissues which are to constitute the future stump be not cut smoothly, evenly, and in such a way as to admit of being brought into mutual contact

without having violence done to their natural affinities, the cure will, in all probability, be tedious and imperfect. And I may also remark, that where so many sensible parts must be cut, the surgeon who is longer in doing the operation than is necessary for its proper performance, will hardly fulfil his duty to the patient.

Having said enough to show that the manner of performing amputation is a subject of great importance, as well to the credit of surgery as the interests of humanity, I shall now inquire into the merits of the different methods of operating in common use, and endeavour to ascertain how far they are well calculated to answer the intentions with which they are employed.

And, first of all, I shall consider the plan of circular incision, so commonly followed in this country. The manner of proceeding here, as every surgeon knows, is, first, to dissect back the skin for some inches; then to cut the muscles as high as they are exposed; and, lastly, to remove the bone as far up as the retraction of the flesh will allow. Now, of all the operations ever adopted for amputation, I certainly look upon this one as the worst, inasmuch as it is tedious, painful, and little calculated for leaving the sound parts in a good state either for healing, or forming a proper covering for the bone.

That it is tedious, every one will allow who reflects upon the multiplicity of its steps. First, there is the cautious circular incision of the skin; the change of knife; the dissection of the skin; its turning-back; the change of knife; the adjustment of the assistant's fingers, that they may not be cut off by the relentless sweep which divides the muscles; the change of knife; the separation of muscles from the bone; the division of periosteum; the application of retractors; and, lastly, the sawing of the bone. It may be said that I have mentioned more steps than enough—no doubt; but I must describe the operation as it is generally performed.

But if it be granted that this is a tedious way of operating, then my second position follows as a matter of course; for if the pain of all operations be in the inverse ratio of their quickness, it is clear, that where so many sensible parts as must be cut in amputation are divided by slow and numerous stages, the patient's suffering cannot be but truly intolerable.

My third assertion regarding this plan of operation is the most important, as far as its credit is concerned. For I am aware that there are many patients, as well as surgeons, who esteem the time spent, and pain suffered in an operation, as of little consequence when compared with its proper performance—and, no doubt, with much reason, though I must be allowed

to say, that, as far as my observation goes, the operations which are performed best are done quickest.

Let us see, then, in what condition the soft parts are left to unite, after an amputation performed, according to rule, by circular incision. And, for example, suppose we examine the appearances presented by the stump of a thigh which has been amputated after this fashion, before any bandages or other restraints have been put upon it. The first thing that strikes us is the bone standing eminently conspicuous, stripped of its periosteum and other connections; round it the muscles are to be seen, exposing an irregular ragged surface, owing to their unequal division and retraction; and, lastly, as our view is directed towards the circumference, we observe the thin, bloodless skin hanging loosely about the ill-assorted parts with which it will require to unite, when drawn into a bag by stitches or adhesive plaster.

The application of a bandage will, no doubt, improve the state of matters to a certain extent: it will compress the soft parts generally, and push the muscles forward so as to form a cushion for the bone; and if union between them should fortunately happen by the first intention, then a tolerable stump may be obtained; but such an occurrence is not very apt to happen where the raw edges are irregular, and forced into contact, and suppuration much more frequently takes place; the consequence of which is, that the muscles, not being prevented from obeying the tendency of their tonic contractility, by natural union over the bone, withdraw themselves from its extremity, which is consequently exposed to the air; and thus the patient is condemned to all the miseries of sugar-loaf stump, unless means of prevention be employed by nature in the way of exfoliation, or by the surgeon performing a secondary amputation.

If I ask one surgeon, or all the members of the profession, what is the chief requisite of a good stump? I shall be told, plenty of muscle; but if this be the case, I should wish to inquire of those who admire the plan of amputating by circular incision, how they reconcile their principles and practice? for surely there is no method more effectual than this for saving redundant skin, and less calculated for leaving the necessary quantity of flesh.

The skin not being possessed of much elasticity,—whereas the muscles not only are so, but besides have a constant tendency to become shorter, in consequence of their tonic power of contraction continuing to exert itself after the resistance naturally opposed to it has been removed,—we might naturally imagine that surgeons, who proceeded on the principle of saving

the flesh long in proportion to the integuments, would cut the former as low as possible, and the latter as high ; yet, on the contrary, we see the skin dissected back for some inches, so that connection with subjacent and contractile parts may have no effect in making up for its deficiency of elasticity, and so rendering it shorter, while the muscles are carefully cut as high up as they are exposed ; and, as if this were not sufficient for diminishing their length, the connections which they have with the bone are separated, so as to allow the contractile power to exert its full effect ; the consequence is, that the bone, immediately exposed to a great extent, deceives the surgeon, who, judging by the portion removed, thinks he goes high enough when sawing at the point to which the muscles have themselves retracted. Thus, every thing that can be done, to diminish the quantity of flesh, is done, and nothing remains for forming the stump but skin and bone. Whence it happens that a good covering can rarely or never be obtained for the bone, which is generally protected, even after the most favourable cure, by skin only, or more frequently a thin cicatrix, and the patient is constantly exposed either to actual suffering, or to the dread of it, from rheumatic pains, ulcerations, and other accidents, which are apt to be induced by variations of temperature or the slightest injuries.

Am I not justified then in saying, that this operation is, in every point of view, bad ?

How, in despite of the obvious and unanswerable objections, which I have stated, it should still meet with such general patronage, I am at a loss to explain, unless, indeed, the equality which it establishes, as far as amputation is concerned, among all operators good and bad, be its redeeming virtue. If so, I trust that this plan will ere long follow the fate of others resting on the same bad foundation ; and, like the gorget, be banished from enlightened surgical practice.*

There are two modifications of the method by circular incision, which may next be noticed ; one of these is that adopted by the celebrated Baron Dupuytren of Paris, where I have often seen him perform it with great dexterity, in the Hotel Dieu.

* Were I to offer any suggestion for the improvement of an operation which I think ought to be entirely abandoned, I would advise, that the muscles should be cut not on a line with the reverted skin, but as low as they are exposed. There would thus be a greater proportion of flesh to the skin, which, from not being drawn back by the muscles, its connexion with them having been destroyed would still be amply sufficient for covering the stump. We should thus have the same skin and bone, but two or three inches more of muscle.

Instead of dissecting back the skin, Dupuytren cuts all the soft parts at once to the bone, which he next removes after retracting the muscles to what he considers a sufficient extent.— But here he is not very particular, as on most occasions (of amputation I mean,) he makes no attempt to obtain union by the first intention ; indeed I have seen him dress the bone all round with dry charpie, previously to approximating the edges of the stump, for it was seldom possible to bring them into contact. Why M. Dupuytren persists in following this plan, the result of which is not more successful than might be expected, I cannot tell ; indeed, it always appeared to me a most anomalous part of his practice, which, in all other respects, I regarded, from the specimens that I had the happiness of witnessing, as worthy of unquestionably the best anatomist, profoundest pathologist, and ablest surgeon of the age we live in.

I think it but justice to M. Dupuytren to remark, that on one occasion I saw him perform an amputation after his own method with complete success, notwithstanding the most adverse circumstances.

The patient was an old fencing-master, not less, to the best of my recollection, than 80 years of age, whose elbow-joint was diseased so much, as to threaten him with speedy destruction. Amputation was performed about the middle of the arm, and as the soft parts were exceedingly relaxed, they proved amply sufficient for covering the bone and coming into mutual contact. The cure, though opposed by acute pectoral complaints, which did not yield until after free and frequent use of the lancet, went on well and terminated most favourably.

Now, in this instance, I believe that, if more skin had been saved, the result would not have been so fortunate, since, owing to its little elasticity and feeble vitality, every chance would have been afforded for collections of matter in the loose and flabby stump, which must soon have worn out the old man's strength. In such particular cases, then, I think the proceeding of Dupuytren most excellent, rational, and well deserving the imitation of surgeons in this and other countries. It is obvious that the cutting part of the operation is performed almost instantaneously, and consequently with comparatively little pain ; the sound uniting surface too, must be perfectly smooth and free from haggling and laceration.

The other modification of amputation by circular incision, consists in cutting the flesh, not at once by a single sweep, but by two incisions, one of which divides the superficial muscles, the other those more deeply seated. The alleged advantage of this proceeding is, that it enables the surgeon to obtain a better

covering for the bone, than when he follows the common practice ; since, owing to the superficial muscles retracting before the deep ones are cut, the former are left longer than the latter, so that a sort of hollow cone is formed, the apex of which is constituted by the bone. But I do think, that though this reasoning may answer very well in theory, it will certainly mislead, if allowed to dictate in practice. For if the common method be defective, as I have endeavoured to show, from removing too much muscular substance, it is very plain that the double incision must be still more objectionable, as it requires a still higher division of the deep-seated muscles. I may observe too, that unless the surgeon is a very dexterous operator, he will be particularly apt to cut the muscles unequally, so that their surface shall be irregular, unseemly, and little disposed for union by the first intention. I may here give the outline of a case related by Richter in his *Surgical Observations*, as it not only shows the imperfections of the plan just mentioned, but also affords a good example of the inconveniences which attend amputation by the circular incision, even when performed by the most skilful surgeons. "Various means," says Richter, "have been contrived for preventing the projection of the bone, after amputation of a thigh ; all of these, however, have been employed without success." As an illustration of this observation, he gives the case of a boy about 14 years of age, healthy in general, but affected with a disease of the tibia, which, in Richter's opinion, rendered amputation of the thigh necessary. An incision was made three fingers breadth above the knee, which divided not only the skin, but also the cellular membrane, down to the muscles ; and was repeated while the assistant held back the integuments with his hands, so as to permit their still higher retraction, until the upper edge of the skin was at least three large finger-breadths distant from the under. "With the third circular incision," to let Richter speak for himself, "I cut through the muscular flesh, by the edge of the retracted skin, not so far as the bone, but only to about the middle of its thickness. Then with the crucial compress, I made this external part of the flesh be pulled up as high as possible ; and I now, with a fourth cut, divided the remaining muscular flesh down to the bone, at the edge of that which had been drawn up. The whole flesh was now drawn back so strongly with the crucial compress, that the bone was denuded two fingers-breadth at least, and there sawed through." The cure was completed most happily in little more than a fortnight. But what was the result ? "I saw the patient eighteen months after, and to my great astonishment found that all the muscles round the bone had retracted in such a man-

ner, that the bone projected a whole hand-breadth, covered only with the skin." Yet Richter says, "an Alansonian amputation can hardly succeed better than this one did; and I am still of opinion, that the practice recommended by Alanson, of endeavouring to make the stump concave, is very difficult, even impossible."

Having now mentioned the disadvantageous circumstances that induce me to consider the circular incision as a bad plan of amputation, I shall, in the next place, proceed to the second object of this paper, which is to recommend what appears to me a preferable method of performing the operation.

The extreme difficulty, or rather impossibility which must ever be experienced in obtaining a good fleshy stump when amputation of the leg is performed by circular incision, especially when the limb is removed at or below its middle, long ago suggested to surgeons the propriety of saving from the posterior and fleshy part, a flap sufficiently large to cover the bones, and meet with the integuments before.

The advantages of this operation were so obvious, notwithstanding the awkward manner in which it seems to have been executed at first (viz. in the earlier part of last century,) that several of our most distinguished and more modern surgeons adopted and improved it. Of these, the one who has done most towards its perfection, is Mr. Hey of Leeds. That excellent practitioner wisely remarking, that half of the leg was quite sufficient for preserving the use of the knee-joint, a great matter where an artificial leg is to be worn, determined that amputation nearer the ankle was not only objectionable, on account of the redundancy of bony and tendinous parts and deficiency of muscle, but altogether useless, as far as the patient's comfort was concerned. He therefore fixed upon the middle of the fibula as the best point for removing the limb; and has given directions for obtaining, by measurements that will answer in every individual, the dimensions of a flap which may suffice for covering the stump, so that the least expert surgeon can have no difficulty in ascertaining the proper extent of his incisions. With Mr. Hey's improvements, the flap operation below the knee may be regarded as nearly perfect. Many surgeons, however, still abide by the old process of circular incision, though I confess nothing appears to me more wonderful than their doing so, provided they ever had an opportunity of seeing the distressing condition which is the inevitable fate of all those who have been treated in this way, no matter how favourable their cure may be.

When the truncated extremity belonging to any of these un-

fortunate individuals is examined, we find a complete analysis of the constituents essential to a good stump. At one part, there is the tibia covered by skin at the best, and more generally a thin cicatrix only ; at another, the muscles form a great projecting mass, altogether useless and inconvenient, instead of insuring the patient's comfort by covering the bones. I cannot at this moment pretend to recollect how often I have seen stumps of this sort bring patients to hospital ; but feel quite satisfied, from the result of my observation, that no man, especially in the lower walk of life, can possess one of the kind long, without requiring medical assistance.

The great superiority of amputation by the flap over the common plan of operating below the knee, led some surgeons who paid more obedience to the suggestion of correct principles, than the dictate of common rule, to try the same method in other situations. Indeed, what could be more natural for those acquainted with the circumstances which favour and oppose union by the first intention, than to think favourably of an operation which enabled them to bring all the soft parts into mutual contact, without disturbing their natural connexions ?

Yet, strange to tell, the flap operation has never yet met with any decided and unqualified approbation ; on the contrary, it has always been performed with an apology, and spoken of as a questionable experiment. Even Lisfranc of Paris, who teaches operative surgery after the newest and most liberal fashion, while he shows the method of amputating by the flap, seems rather inclined to favour the circular incision. In this country, the operation is almost unheard of. Mr. S. Cooper, whose opinion I know has much weight with many people, thus expresses himself relative to its merits, in his *Surgical Dictionary*, page 43, third edition. "The flap amputation is certainly more painful than the common method ; and, though it has had very able men for its patrons, it is questionable whether it is productive of the smallest advantage." And again, "The flap amputation of the thigh is now quite abandoned by all the best surgeons in this country, and no description of it seems necessary." Notwithstanding this decided tone of censure, I am inclined to think most favourably of amputation by the flap on all occasions ; and my opinion is not founded on theory alone, but rests on much observation ; for my friend Mr. Liston has used no other operation than this for some years past ; and his well known success, in my opinion, shows the excellency of the practice. I also have operated after this plan on several occasions with the happiest result.

Being fully satisfied, then, that amputation ought to be, in ev-

ery case, performed by the flap, I shall now endeavour to explain the method of operating which is found to answer best. No general rule can be given for determining the requisite size of flaps. It is true, that a knowledge of what proportion there is between the osseous and muscular parts will assist so far.—Thus, if there is but one bone, and an equal covering of muscle, it will be best to make two lateral flaps; when, again, there are two bones, and a deficiency of muscle on one side, a single large flap will be obtained from that part where a good one is to be got. But as, in forming the flaps, the surgeon must always cut with that degree of obliquity which may leave the skin and muscle sufficiently long to meet easily over the bones, and as it is necessary here to make due allowance for retraction of the different tissues, it is evident that no practice on the subject can ever teach the necessary precision,—a sort of tact which can be required only by frequently seeing the operation properly performed on the living body. And even with all advantages, the perfect performance of this operation must obviously require eyes and hands much more skilful and experienced than what are competent to execute the common plan by circular incision; but the difficulty is not so great as might be imagined, and, such as it is, seems to me rather an advantage, in so far as it may deter presumptuous individuals from attempting what they are qualified to perform neither by talent nor education.

When the flap operation is performed, the soft parts may be cut either from without inwards, or from within outwards. The first of these methods was the one practised at the first introduction of the plan, and is still, I am informed, employed with great dexterity by that skilful surgeon Langenbeck; but the second is, I think, preferable, as it is done more easily, and seems to give less pain to the patient.* In both cases, the object of the

* This circumstance is, I believe, owing not only to the greater degree of rapidity with which the incisions are performed, but also to the inner surface of the skin being cut first. Every surgeon must have noticed, that patients express much less pain when abscesses or sinuses are opened by cutting outwardly, than when the same thing is done from without inwards.—There is even a difference often remarked in the suffering expressed during the introduction of stitches for the interrupted suture, the patient complaining bitterly when the needle is passed through the skin inwardly, and comparatively taking little notice when it is passed in the opposite direction. It is not easy to explain the reason of this circumstance; perhaps it ought to be ascribed to the branches of nerves being divided previously to the injury of their sentient extremities. But be this as it may, there can be no doubt as to the fact, which, though I am aware, in general, little if at all taken into consideration, is nevertheless, in my opinion, deserving of attention from every humane surgeon who thinks of his patient's feelings, and endeavours to abridge, as far as may be possible, the agonizing pain of those cruel measures which necessity alone can justify.

surgeon is precisely the same, viz. the formation of proper flaps, by cutting more or less obliquely, according to the thickness of the soft parts. As I have said before, no general directions can be given for determining the extent of the incisions ; I shall therefore content myself with describing the manner in which they may be executed most advantageously.

Lisfranc recommends a long very narrow knife, sharp on both edges ; but I think the one used by Mr. Liston better calculated for the purpose. It is about six inches in length, and five-eighths in breadth, thin and blunt in the back, except for an inch from the point, which is very sharp ; the back is straight and so is the belly, except about an inch and a half from the point, which is slightly convex.

The dimensions which I have stated are fully sufficient for the arm and fore-arm, the leg, and all amputations in children ; for the thigh of an adult, a greater length will of course be required.

The surgeon grasping the limb with the left hand, at the place where it is to be removed, ascertains the situation of the bone by means of his thumb. He then introduces the knife over the bone at that part where he wishes to apply the saw, and, perpendicularly to it, he passes close by its side, and so on until the point appears directly opposite.* This finishes the first part of the operation, or the transfixion, as it is called ; after which, he cuts his way outwards, in a line forming an angle with the bone more or less acute according to circumstances, so as to complete one flap.

He then embraces the remaining undivided parts with his left hand, and, gathering them together, passes the knife on their side of the bone, so as to insulate it completely. Removing the restraint of his left hand, he now forms a second flap in the same way as he did the first.

If there is only one bone, he immediately divides it, his assistant holding aside the flaps with hands as high as it is exposed ; if there are two, he separates the interosseous substance, and does the same thing ; thus finishing his operation, which, with reasonable haste, and without the smallest hurry, need never occupy more than half a minute at most.

* There is some difference of opinion as to whether this first flap should be formed from the external or internal side of the limb. But as this seems to me a matter of perfect indifference, unless in reference to the operator's convenience, I would advise the surgeon, unless he be ambidexter, always to pass the knife, in the first instance, on that side of the bone which corresponds with his right hand as he stands before the patient.

It is impossible to imagine a greater contrast than that afforded by a comparison between the wound which results from this operation, and that caused by the method of circular incisions.

The bone, instead of standing naked and conspicuous, can hardly be discovered until the flaps are laid aside. The muscles, not now deeply retracted, and exposing an abrupt, ragged termination, extend far beyond the bone, and display two smooth equal surfaces, amply sufficient for coming into mutual contact, and well disposed for reciprocal union. Lastly, the skin, so far from forming a loose and hanging border about the wound, is left in undisturbed connexion with the subjacent parts, and in proportion just sufficient for supporting and covering them when the two flaps are brought together.

The difference of appearance is not less remarkable, after the wounds have been dressed.

In the one case, the line of union is straight, in the other it represents the arc of a circle ;—in the first there is puckering of the integuments, in the second there is none ;—in the former, the muscles form projecting and inconvenient corners ; in the latter, they exist only when they are most required, i. e. over the bone.

Union by the first intention most commonly attends amputation by flap ; but, if suppuration does become established, there is much less inconvenience than generally happens. And I may here remark, that many as the operations, which I have seen of this kind, are, I never yet met with an instance of the bone protruding or exfoliating. I may notice, too, that the inconvenience mentioned by Richter as the greatest attending the amputation of the thigh, viz. the extensive and long continued retraction of the posterior muscles, is avoided, as those only on the lateral aspects are employed to cover the bone.

The difference of comfort enjoyed by the patient after the cure, is also most decidedly in favour of flap method, since the stumps formed by it, instead of being conical and skinny, are uniformly round and fleshy.

Having said so much relative to amputations in general, I may now make some observations on those in which the bone is not divided, but is removed from its articulating cavity.

Until of late years, amputation by disarticulation was an operation hardly tolerated by surgeons, who, from some old and deep-rooted prejudices concerning cartilaginous surfaces and synovial apparatuses, regarded the articulating extremity of a bone as an almost insuperable obstacle to healthy and speedy union.

Now, however, we know, that the synovia is not secreted by

a glandular apparatus, since none exists really in any joint, and not even apparently in many where that fluid is found in abundance, but is the product of a serous bag, which ceases to pour forth its lubricating product as soon as all occasion for its presence is taken away, by the removal of the bone, whose friction it was intended to lessen.

We also know, that cartilage, though possessed of feeble powers as far as the process of granulation is concerned, nevertheless does not act as a foreign body, in keeping up irritation and preventing union, since perfect and speedy cures frequently follow amputation, even when performed at the largest joints of the body. Why, then, surgeons should still scruple as to performing the most trifling disarticulations, and persist in using their retractors and saws for the partial and total removal of fingers and toes, thus making tedious operations out of what might be done much better, and almost instantaneously, by disarticulation, it is not easy to explain; unless we suppose the power of habit is as powerful here, as we know it to be on some other occasions.

Mr. Lisfranc is a great advocate in favour of disarticulation, and teaches the method of operating for most of the joints of the extremities,—indeed all of them, with the exception of the ankle and knee. He does not, however, approve much of amputation at the wrist and elbow. It is at the joints of the fingers and toes, those of the first and fifth metacarpal and metatarsal bones, that of the metatarsus, with the tarsus, together with those of the shoulder and hip, that he decidedly recommends disarticulation.

The plan of operation in all these cases is, generally speaking, the same, viz. to cut into the joint on one side, and out of it at the other; taking care that, in doing so, one or more flaps are preserved from the parts best able to afford them. The instrument employed is on all occasions a long narrow knife, the dimensions of which will of course be varied according to the size of parts concerned. For the fingers and toes, a common straight operating bistoury is sufficient; for all other cases, a much larger knife is required; and for the hip-joint, one not less than a foot in the blade is necessary.

I shall now describe what seems to me the best of Lisfranc's operations for disarticulation,—not with his exactness and extreme minuteness, which, I am inclined to think, tend rather to confuse than instruct, but in such a manner as may enable any surgeon, properly qualified in other respects, to carry them into execution when he thinks proper to do so.

In amputating the first and second joints of the fingers and

toes, a single flap, sufficient for covering the bone, is saved from the palmar aspect. The operation may be done either when the hand is held in pronation, or placed in supination. In the first, the surgeon cuts right into the joint with his bistoury, which he then carries closely along the surface of the phalanx about to be removed, until he obtains flap enough for the purpose. In the second case, he pushes his knife through the finger parallel to the bone, and close by the joint. He then detaches precisely the same flap, which, being held up by the assistant, he finishes the operation by cutting directly through the joint.

In separating the fingers and toes at their metacarpal and metatarsal joints, two lateral flaps are formed, one in entering the knife into the articulation, the other in cutting its way out.*

Passing over the removal of the first and fifth metacarpal bones, and that of the metatarsus in whole or in part, I shall proceed to describe two of Lisfranc's operations, which, of all those he has contrived, deserve the highest approbation—I mean those for disarticulating at the shoulder and hip-joints. In amputating at the shoulder-joint, he introduces the point of the long knife usually employed at the hollow, between the anterior edge of the clavicle and coracoid and acromion processes; he pushes it backwards and downwards, so as to pass through the capsular ligament, and brings it out at the posterior and lower margin of the axilla. He then cuts outwards, following closely the direction of the head and neck of the humerus, until he obtains a flap from the deltoid and other muscles, sufficiently large. This finishes half of the operation, which is completed by passing the knife round the bone, and cutting away a second flap from below. No operation can be more speedy, simple,

* Candour is a never-failing ingredient in the character of a good surgeon.

Mr. Liston was in the habit of amputating fingers and toes, by making two lateral flaps with a scalpel, and dividing the bone by means of the cutting pliers, which he has contrived and employed so extensively and successfully in operating on diseased bones; but on learning from me the method of Lisfranc, described above, was so much pleased with its facility and other advantages, as to adopt it almost exclusively.

In the same way, the illustrious Baron Dupuytren made use of the instrument just mentioned, at my suggestion, with the most perfect success, in the Amphitheatre of the Hotel Dieu, and in a case, too, where even he expected to meet with very considerable difficulty.

Mr. Liston, however, still as formerly, employs the cutting pliers when it is necessary to take away a portion of the metatarsal or metacarpal bones; and no method can be better calculated for the purpose, since it is easy, certain and speedy, enabling the surgeon to perform instantly, what, with the employment of half-headed trephines, chain-saws, Machel's saws, circular saws, and other ingenious toys, would, if perfected at all, require hours of hard work.

and better calculated for obtaining good flaps than this, which Lisfranc actually performs on the dead subject in two seconds.

In operating for the hip-joint, Lisfranc proceeds in the following manner:—The patient being placed on his back, he introduces the point of a very long double-edged knife into the fore-part of the thigh, over, or rather a little above, the articulation of the femur with the acetabulum.* He pushes it close past the neck of the bone, and brings it out on the opposite side of the limb, a little below the tuberosity of the ischium. Then he cuts outwards, following the shape of the trochanter major, and proceeds close down along the femur for an inch or two below that process. He at last turns the edge of his knife, and completes the first or external flap. The arteries which have been cut should now, according to his advice, be tied. The second part of the operation consists in forming an internal flap, by grasping the undivided parts in the left hand, and passing the knife close to the inner side of the neck of the femur, so as to detach it from all connections with the muscles and then cutting downwards, attending to the shape of the trochanter minor, below which the knife should be carried for an inch or two, and then turned gently outwards, so as to finish the second flap. It is obvious to one acquainted with the anatomy of the parts, that, as long as the surgeon merely cuts downwards, and keeps close by the bone, he will not injure the femoral artery, which cannot be divided until the knife is carried outwards: And here lies one great excellence attributed by Lisfranc to his operation; for before the surgeon cuts the femoral, the assistant is enabled to introduce his fingers at the solution of continuity, and compress the vessels. The arteries of this flap also having been secured, nothing remains but the third part of the operation, or the disarticulation, properly speaking.†

To effect this, the surgeon, seizing the limb with his left hand, while the assistant holds aside the flaps, makes a cut half round the margin of the acetabulum at its fore part, with the same

* To determine the proper part for this purpose, Lisfranc advises us to measure three quarters of an inch directly inwards from a point an inch and a half distant from the superior anterior spinous process of the ileum, in the direction of the knee; but I very much distrust the propriety of giving any such directions; for I have invariably seen measurements mislead, when trusted to in performing an operation; and even granting, for the sake of argument, that they may indicate the position of parts concerned in some operations, still I think it will not be denied that they are altogether useless to an anatomist; and it is to be hoped, that no man who is not an anatomist will attempt any important operation.

† Had I again to amputate at the hip-joint, I should still defer securing the vessels until the disarticulation was completed.

keenness as if, says Lisfranc, he expected to cut through the head of the bone. The capsular ligament having been thus fairly opened, he performs abduction, starts the bone from its socket, passes the knife round its head, cuts the triangular, and what remains of the capsular ligament, and so finishes the operation.

II.

*Observations on Amputation.** By ROBERT LISTON F. R. C. S. &c.

(From the Edinburgh Medical and Surgical Journal.)

Though the operation of amputating limbs has been much improved in this country within the last sixty or seventy years by O'Halloran, Alanson, Hey, &c. still it does not appear to have as yet attained to the utmost point of perfection. To me it appears, that it would be well to reject several manœuvres now practised, whilst some neglected proceedings might be with advantage revived. Were the modes of operation, which I am in the habit of putting in practice, generally adopted, the cases of amputating instruments might be emptied of their contents, with the exception only of the saw, which, by the way, is seldomer required than might be supposed.

In the first place, then, as to the tourniquet, without previously applying which, few practitioners will make the slightest scratch on the extremities; it is, in my opinion, of no use, and, in many cases, it is worse than useless. If the surgeon does not think himself (or rather his patient) safe, without the compression of a pad on the artery, with a circular strap betwixt the centre of the circulation and the part on which he is to operate, a much simpler apparatus than the screw-tourniquet may be had recourse to—a silk handkerchief and a bit of wood. But any means of this kind, tourniquet or other, whilst it arrests but imperfectly the flow of blood in the arteries, produces great engorgement of the veins. Unless the tourniquet is screwed with extreme tightness, or, supposing that it has been so screwed, it is at all relaxed, so as to allow the surgeon to find the mouths of the vessels, bleeding to a considerable extent always occurs—

* These Observations were sent to us as part of Mr. Liston's paper on Caries, but, with Mr. Liston's permission, we have printed them separately as a sequel to Mr. Syme's paper, with which they appear to us to be more intimately connected.—*Editor.*

say to the extent of a pound, or even more. Many patients are so exhausted before they can be induced to submit to the operation of amputation, as to bear this loss with difficulty. The pad of the tourniquet cannot be applied so high in the thigh, owing to its form, as to command the deep-seated arteries. The blood is poured freely through them; and finding its way also into the veins, is evacuated from their cut extremities also, especially from the more superficial ones, in which the return is most effectually retarded by the circular band. In fact, such a degree of general pressure on a limb, as will have but very little effect on the arterial circulation, will most effectually arrest the flow of blood in the veins, their coats being thinner and more compressible, and their circulation much more slow and languid; whilst, if the operation is performed by circular incision, the retraction of the parts will be in a great measure prevented. The hemorrhage even from the femoral vein is often so profuse when the tourniquet is employed, as to have induced that late excellent surgeon, Mr. Hey of Leeds, to recommend, and many others to practise, the dangerous expedient of including it in a ligature. When we see, in an ordinary amputation of the thigh, eight, ten, or a dozen of vessels tied, the tourniquet in the meantime being screwed and unscrewed; and when we know that, in similar circumstances, when no such contrivance is had recourse to, the hemorrhage is equally well arrested by two or three ligatures, little doubt can remain, but that the greater number of bleeding orifices have been venous. The bad effect of tying a single vein, even under favourable circumstances, has only to be hinted at, in order to show the impropriety and danger of this practice. When a surgeon wishes to distend the veins of an extremity, he does so by surrounding it by a tight circular band, and this is not the state most favourable for making any extensive incisions into it.

The adjusting of the tourniquet is productive of delay, and always harassing and painful to the patient's feelings.

The greatest of all amputations, those at or near the shoulder, or hip-joints, are readily accomplished, without any such preparation; and why not those lower down, where fewer and smaller vessels are divided, and better opportunities afforded of applying pressure to the principal vessels? Notwithstanding what Mr. John Bell (than whom no better authority on many surgical points can be adduced) has so eloquently urged pressure complete enough, not only to stop the pulsation of an artery in a limb, but also to arrest completely the flow of blood, can be easily applied by the fingers only.

So much have I been impressed with this fact, (and I only

mention the circumstance to show that my impression was correct,) that I have repeatedly, when no proper assistant was at hand, compressed both the femoral and humeral arteries with the fingers of one hand, whilst with the others I removed the limb, and with the loss of much less blood than if I had followed the ordinary mode. This, however, is an experiment there is no necessity for repeating. The assistant-surgeon can apply the pressure whilst the incisions are made. One of his hands are free afterwards to take hold of the vessels with the forceps. The pressure does not require to be very great, provided it is properly applied. The subclavian, for instance, can be easily commanded against the first rib, and the femoral upon the brim of the pelvis, so as to arrest the flow of blood into the limb.

In amputations lower down, it may be convenient to make the pressure lower; and there are many points at which it can be so made. Opportunity is afforded of doing so completely and freely; for, with the forceps in the one hand, and compressing the principal artery with the other, if the assistant does not readily see the mouth of a vessel, he can, with the greatest facility, relax his grasp a little, and again instantly make compression as occasion may require. There is here no twisting or untwisting, or screwing or undoing the pressure; it is all accomplished without confusion and bustle, or even the appearance of it. From a good deal of experience, I can vouch for the perfect safety of this plan.

The mode of amputating by the circular incision is liable to many weighty objections, especially as it is ordinarily practised; the first, and a great one, is, that it is complicated, and requires a considerable space of time for its performance.

When the time necessarily demanded is lengthened out through the unsteadiness or incapacity of the surgeon, the suffering and danger to the patient is excessive, so much so indeed, that many sink before the first dressing. When the skin is dissected from the fascia, and turned back, like the sleeve of one's coat, (to say nothing of the cruel delay it occasions,) being deprived of its vessels, it generally sloughs; and as is often the case if the bone has no other covering,—forth it comes also, part of it in its turn dies; and if the patient has still strength of constitution left to bear up against the discharge and suffering, it also is thrown off.

A stump thus formed can never have any of the qualities of a good one. I do not mean to deny that a good stump can be formed by the circular incision. By retracting the integuments, and with the point of the amputating knife* dividing the slips of

* The changing of instruments adds greatly to the length of time spent in

cellular substance which connect the skin to the fascia, and then cutting the muscles, turning the edge a little obliquely upwards ; or, perhaps, by using the knife in such a way as to make in its course round the limb two flaps on the inner and outer side through both integuments and muscles, a very good fleshy stump may be obtained ; but still the time requisite for all these various manœuvres is greater by ten times than in the plan I propose recommending, and the operation certainly altogether more tedious than there is any occasion for.

Neither the retractors of tin, leather, or cloth, the tenaculum nor the bone-forceps, are, or should be at all necessary ; and unless the surgeon or assistant who supports the limb is very inattentive, the latter can never be required.

In the flap operation, the holding one of them aside allows the saw to be applied when that instrument is required. With the tenaculum it is a very difficult matter to take hold of the artery, so as to pull it out quite clean. The dissecting forceps can be used for that purpose with better effect, whilst that instrument is also in many operations of great use otherwise.

For a considerable time past I have had recourse to flap operations, from witnessing the bad effects of other modes (I am ready to allow not always very well executed,) and from a desire of having a good covering of both skin and muscle for the end of the bone. I have every reason, in the successful and speedy termination following such operations, to continue in the same course. By cutting from within outwards, the skin is left adhering by its own vessels, &c. to the subjacent parts, and, without trouble or loss of time, a good stump is at once formed. The operation is applicable to every part of the extremities, whether the bones are to be disarticulated or cut across.

In the thigh or arm, the flaps are best made by grasping the parts on one side, and pushing a long, sharp-pointed knife through them close by the side of the bone. The longer the knife, the more speedily and easily, both for patient and surgeon, will the flap be formed. In fact, it may be completed frequently in pushing the knife through, without retracting it at all, or having recourse to the sawing motion. Immediately on making the one flap, the knife is passed on the other side of the bone, so as to come through the former incision, and then brought out after the same fashion.

A single turn with the point of the instrument will be sufficient

this and other operations—such as the order I have seen them used in : Tourniquet, amputating knife, scalpel, band to retract the folded integuments, amputating knife, catline, retractors, saw, bone-nippers, tenaculum.

to separate what of muscular substance remains close to the bone ; and, by holding aside one of the flaps, the saw can be thus readily applied, and the amputation finished. But a few seconds will suffice for its performance—in most instances not above ten or twelve.

III.

M. BOYER on *Diseases of the Kidneys and Ureters*.

(From the Quarterly Journal of Foreign Medicine and Surgery.)

In a state of health, the quantity of the urine passed in a day generally measures between a third and a half of the liquid and solid ingesta ; but it varies much according to age, climate, the state of the alvine and cutaneous evacuations, and so forth, and these variations may be considerable, without implying a state of disease. When the secretion of the kidney is excessive, and the urine is loaded with a saccharine matter, the disease is named diabetes ; and opposed to this we have suppression of urine when this fluid is not secreted at all, or but scantily. We do not mean to follow M. Boyer in his disquisitions on diabetes, as we do not find that he has advanced any thing very interesting on this subject ; but we shall confine ourselves to those diseases of the kidneys and ureters more strictly surgical.

Suppression of the urine is most frequently the effect of other diseases which exercise more or less of influence upon the functions of the kidneys ; it is an affection of the secretion, as retention is of the excretion ; it may be complete or incomplete, according as the secretion is completely arrested, or only in part ; of the one kidney only, or in both—though ordinarily, when the functions of one kidney are disturbed, those of the other suffer through sympathy, so that what was at first an incomplete, becomes a complete suppression. When this affection attacks suddenly both kidneys at once, the state of the patient is perilous in the extreme. To ascertain that a patient labours under suppression, who has rendered little or no urine for some days, we should attend to the following symptoms : softness and want of tension in the epigastrium ; the bladder loose and flaccid, which may be ascertained either by applying the hand above the pubis, or per anum ; the patient having no desire to void urine ; the introduction of a catheter procuring the issue of no urine, or but of a small quantity, which may have been in the bladder at the moment the suppression occurred. To these are added the symptoms which belong to the disease,

of which the suppression is the result, and which differ according to the seat and nature of these diseases. In ascites, for example, the secretion of the urine is always diminished, sometimes entirely suspended. The suppression, according to M. Boyer, sometimes precedes the hydropsic, which then appears to be owing to the reflux of the urine; sometimes it succeeds, in which case it is probably the effect of the dropsy. We presume to think that in most cases the suppression is a symptom of the dropsy, unless when the dropsy as well as the suppression depend on some organic lesion of the kidneys.

The cause of the suppression which we sometimes encounter in hysterical and hypochondriacal patients, is obscure. M. Boyer thinks it should be attributed to spasm of the uriniferous ducts, which renders them impermeable to the urine. All we dare venture to say to this is, that it may be so. When the suppression is complete, it is usually attended with the most dangerous symptoms, unless the place of the urinary secretion be supplied by some other serous evacuation, diarrhœa, sweats, vomitings, &c., in which case the malady may persist for months, or years, without producing death.

Wounds of the kidneys are rare, in consequence of the deep situation and the mass of parts which cover these organs. To ascertain their existence we should attend to the directions and the depth of the wound; to whether the patient passes blood by the urethra, or bloody urine; to retention produced by collections of blood in the bladder, or clots stopping up the urethra; to whether he has a fixed pain in the lumbar region, extending to the groin and testicle of the same side with retraction of the latter. But the symptoms vary much according to the part of the kidney which is wounded, and as the lesion of the other organs is more or less severe. If none of the large vessels are opened, and the other viscera are not severely injured, the patient has merely a discharge of blood, or bloody urine by the urethra, and the wound, as M. Boyer has had occasion to observe, generally heals in ten or twelve days. More generally, however, the symptoms, even in cases which get well, are much more severe, the patient ordinarily continuing to have discharge of pus from the bladder for a long time. Haller mentions the case of a young medical student who had a sword plunged into the lumbar region by one of his companions: he experienced little pain in the part though he at first passed much blood with his urine, and afterwards pus for three months. Haller attributes the cure to the strict diet which this young student followed, he having taken little besides barley water for three months. In the 42 Vol. of the *Jour. de Med.* there is the case of a bayonet

wound of the right kidney which terminated happily on the 24th day, although the patient at first experienced a lively pain, and general tension of the abdomen ; and on the second day passed two plates full of arterial blood by the urethra. On the third day, also, there was alarming hemorrhage from the wound ; and on the following days there was frequent retention of urine, caused by clots of blood and pain at the epigastrium ; but after the 12th day all the bad symptoms disappeared. Repeated bleeding, rigorous diet, and injections, were the curative means employed. La Motte furnishes us with a case of wound of the kidney, which terminated happily. This wound was made with a large sword, which was plunged into the loins at the right side, and came out at the left, considerably more forward than where it entered. The patient at first lost much blood by the wounds, and afterwards by the urethra ; after the eighth day, healthy suppuration was established, and the patient was cured in six weeks.

M. Boyer observes, that almost all the cases which are recorded of wounds of the kidney getting well, were from behind ; and, indeed, if we attend to the important parts immediately in front of the kidney, we at once see that they ought to be infinitely more severe. If the renal arteries are wounded, and, at the same time the peritoneum, we have interior hemorrhage, which is almost always mortal.

Laubius mentions the case of a sailor, who was struck under the last false ribs of the left side with a large knife. The patient at first passed much blood by the urethra ; violent fever, vomiting, and death, speedily supervened. On inspection much blood was found in the cavity of the abdomen ; the knife had traversed the spleen, and had been plunged deeply into the left kidney. We are counselled to combat the first symptoms of these wounds by bleedings, injections, diluent drinks, &c.

Idiopathic inflammation of the kidneys is generally occasioned by blows on the lumbar region ; prolonged and rapid journeys on horseback, especially in hot weather ; and in the use of powerful diuretics, such as the turpentine and cantharides. To these M. Boyer, in compliance with the doctrines of the French schools, adds, repercussion of gout, rheumatism, skin diseases, and suppression of hemorrhoidal and other habitual evacuations. This, like all the other acute internal inflammation, is accompanied by fever, which sometimes precedes, sometimes succeeds a deep pain in the region of one or both kidneys. This pain is at first obtuse, and tensive ; but it afterwards becomes acute and darting, and is accompanied by a sensation of burning heat. It is less poignant, however, than in the nephritis de-

pending on calculus, and does not extend in so distinct a manner along the ureters towards the groins; it is not ordinarily accompanied with retraction of the testicle, or numbness of the thigh, nor do the movements of the body increase it to the same degree as in lumbago, and other rheumatismal affections of the muscles of the pelvis. The urine is commonly changed to a deep red colour, and is rendered frequently, and in small quantities at a time. When the inflammation is very violent, it is clear and limpid; and when the disease extends to both kidneys, it is sometimes entirely suppressed; but, according to Fred. Hoffman, it is very rare that both kidneys are thus affected simultaneously. The pulse is at first full and vibratory, but, as the spasm and pain advance, it becomes concentrated, feeble, hard, and intermittent.

We are to attempt to procure resolutions of this inflammation by the usual means, especially bleeding, which often requires to be repeated four or five times in the course of the first twenty-four hours. Our readers must have observed that the French surgeons employ the lancet with more freedom than the physicians; but yet, so far as we know, their notions with regard to the effects of this remedy are limited and unscientific. It seems to us that the medical men in France have the vulgar notion with regard to bleeding, that it merely diminishes the quantity of circulating fluids; hence, we so seldom hear them talk of bleeding till fainting is produced, or some decided abatement of the symptoms; they make a small bleeding now, and another again; they seem never to have dreamed that it is possible, by one bold and free bleeding, to arrest almost all the acute inflammation in the very threshold, and that at a much less expense of the forces of the patient, than when the disease is allowed to run on, or some faint attempts made to arrest its course by insufficient bleedings. After these bleedings, leeches to the anus are, as usual, recommended. M. Boyer speaks in favourable terms of deep scarifications upon the loins, and the abstraction of blood by the cupping-glasses—a mode of local treatment which we should think applies admirably to the disease in question, as blisters are in a manner proscribed in all inflammations of the urinary passages. The French practitioners insist much more upon a rigorous diet than we do; upon this head, we think it would be well, that we imitated their example somewhat more. The patient should avoid as much as possible the heat of the bed, and reposing on the back. In fine, when it is judged that the resolution of the disease is well advanced, we are to have recourse to such laxatives as promote plentiful evacuations, without causing irritation.

The termination of nephritis by gangrene is rare, but it is observed to be constantly mortal. It is announced by sudden remission of the fever and pain, extreme prostration of the forces, frequent intermittent pulse, hiccup, delirium, cold sweats, continued vomiting, total suppression of the urine, or the excretion of black putrid urine, mixed with small portions of livid flesh. There are few examples of the termination of nephritis by gangrene recorded. Fabricius Hildanus tells us, that his eldest son died at the age of seven years of this disease. After having had headache for two days, this child was seized with pain in the loins, with fever, and suppression of urine. All the means employed failed to procure the flow of the urine, and the patient died on the seventh day. Glandorff, a celebrated surgeon of the time, inspected the body, "and there was found," says Fabricius, "the kidneys and surrounding parts, struck with a strong and remarkable inflammation, degenerated into gangrene." In a gouty patient, aged 62, mentioned by Chopart, death took place on the ninth day from the translation of the gout to the kidneys. This patient had fever, and acute pains in the loins; the urine was scalding, red, and scanty; and was suppressed on the fifth day of the disease. On inspection, the bladder was found thickened and empty; the kidneys enlarged, red, livid, covered with black spots, and easily torn.

When the inflammatory symptoms are intense, and persist in their intensity after the seventh day, there is reason to fear that abscess will form in the kidney. Diminution of the fever, pulsative pains, and irregular chills, indicate the formation of pus here, as in other parts; but the symptoms are often complicated with affections of the liver, spleen, &c., which renders the diagnosis obscure. Matter sometimes forms in the kidneys slowly and insidiously, especially in those who labour under renal calculi, hardly giving even to the most experienced the symptoms necessary to detect its presence. The abscess may exist in the parenchyma of the kidney, and may burst into the calices and pelvis, and the matter be thus discharged by the urinary passages. More ordinarily, however, the inflammation affects at the same time the tunica propria, and the adipose substance which covers it, so that the matter occasionally finds its way into the corresponding part of the colon, but more frequently accumulates in the cellular substance in which the kidney is imbedded, forming a tumour between the muscles and the peritoneum, extending into the lumbar region, and sometimes forward upon the sides of the abdomen. It is not always easy to detect matter in this situation, as the thickness of the abdominal walls prevents it from forming any evident tumour, and gives it a di-

rection towards the vertebral column and pelvis, where it is hardly possible to distinguish it, except in very few cases, by laying the patient on his side, and compressing the abdominal walls in different directions, so as to collect the pus more into one spot. When the abscess takes the direction of the loins, we have often distinct tumour and fluctuation, though sometimes the only exterior signs are œdema, and matting of the integument. When, however, together with the general symptom of the intense inflammation terminating in abscess, the patient has a feeling of weight in the affected part, when he reposes on the opposite side, slow irregular fever, consumption, deep-seated pain, and the matting of which we have spoken, there can be little doubt of the existence of abscess of its seat ; and as little, that it ought to be early opened. When the fluctuation is distinct, and the abscess not very deep, it should be opened with a bistoury ; but when the only external signs are œdema, and matting of the integuments, we ought to employ the caustic potass.

When the abscess bursts into the urinary passages, it generally degenerates into an ulcer exceedingly obstinate to cure, and which is attended by a discharge of a greyish, serous, fœtid, and sanguinolent pus, or whitish, viscid, thick, and mixed with concremented lymph, in the form of pellicles or filaments, and with small portions of flesh. These ulcers are frequently the consequence of calculi : they are rarely susceptible of cure, the patients generally falling into a state of marasmus, and slow fever. In such cases, M. Boyer prohibits the use of the balsams, such as the turpentine and copivy, recommended by some with a view of deterging, and cicatrising the ulcers, contenting himself with advising the use of diluent and mucilaginous drinks, and good diet. If the disease has persisted long, we usually find, on inspecting the body, the substance of the kidney destroyed, and the organ reduced to a kind of pouch filled with pus, or with a mixture of pus and urine.

The kidney is frequently the seat of different sorts of tumours, which are sometimes of an almost incredible size. A man, aged 45, played violently at tennis, which brought on hemorrhage from the kidneys, which renewed itself always when he made any extraordinary movements, and severe pains, which continued to the end of his life. Thirteen years before his death, his belly began to swell, and the tumour went on increasing in bulk, even till his death, which took place in his sixty-sixth year. On inspection, an immense tumour was found occupying the belly, and concealing the whole of the viscera, except a portion of the colon, which passed across it like a shoulder-belt. It had eleva-

ted the sternum and ribs of the left side, and pushed towards the right side the intestines and spleen, the latter being found imbedded upon the vertebral column. On cutting into the tumour, there issued different sorts of matters ; some were yellowish, mixed with minute glandular looking bodies, and with rough calculi, some as large as the end of the thumb ; some were thicker, more viscid, of a greenish brown, like the lees of olive oil ; others whitish, and of the consistence of honey, or melted glue. At its back part, it contained six pounds of coagulated blood. This tumour weighed 68 pounds, independent of the fluids it contained ; it was oval, and its greatest circumference measured 4 feet 8 inches, its least, 3 feet 10. The ureter arose from its superior part, and was directed along the vertebra towards the bladder. The renal artery and vein were greatly enlarged. The right kidney was sound.

A soldier, mentioned by Chopart, in his inestimable work on diseases of the urinary passages, passed frequently pure blood by the urethra, and had for a long time in the left side of the belly, a tumour, which extended equally towards the umbilicus and the groin. It was oval, hard, indolent, and was thought at first to have developed itself in the cellular substance of the peritoneum. By bleeding and leeches to the anus, the discharge of blood by the urethra was arrested. The pains in the tumour having become pulsative, it was imagined that matter was forming, and the usual means to promote this event were employed ; however, the tumour continued to augment ; the pains became more severe ; numbness of all the members, and paralysis of the left lower extremity followed ; finally, incontinence of urine, spitting of pus, passing pus with the urine, and death. This tumour was found to be the left kidney enlarged to ten times its natural bulk : it weighed eight pounds and a half, and preserved its natural form. It was presented to the Royal Academy of surgery. It contained many collections of matter of the colour of wine lees. These collections were separated from one another by cellular partitions ; and enveloped in the common membrane of the kidney, which had become thickened.

Another very minutely detailed case of tumour in the kidney is given us, which occurred in the practice of Professor Corvisart, at la Charite. The tumour extended from the right hypochondrium into the left iliac region ; it was curved, the concavity looking upwards and the convexity downwards ; it seemed formed of many lesser tumours, two of which, the upper and the lower were remarkable ; inasmuch as the first extended from beneath the false ribs, occupied the region of the kidney, and was lost towards the umbilicus in the rest of the tumour, while the

second, which was exceedingly hard, was situated in the left iliac region. The first was soft and offered some degree of fluctuation. This patient, when a boy, had been struck with a stick upon the right kidney, and he had ever after been subject to pains in the part which were aggravated by fatigue. At the age of 42 he fell upon the same side which aggravated the complaints. When admitted into the hospital, the pains in the tumour were acute and darting. Corvisart announced to the students, that the tumour was formed by the right kidney; and mentioned the case of a man whose kidneys were the seat of a serous and lymphatic collection, and on whom puncture of the kidney was practised. Believing, however, that the disorganization was too extensive to admit of relief by any means, he contented himself with prescribing some simple medicines, and the patient died two months after admission. On inspection this tumour was found to have pushed the liver, stomach, and part of the intestine upwards, while the rest of the intestinal canal was below and behind it. Its inferior extremity rested in the left iliac fossa, and filled up almost entirely the entrance of the pelvis. The arch of the colon passed across its fore part. On separating the viscera, it was ascertained to be the right kidney enlarged to forty times its natural size, though still preserving its original form. On cutting into it, seven pints of turbid fluid escaped, and mixed with white flakes, little thickened mucus: this fluid was found to contain much albumen. The interior of the tumour was found composed of cells, which communicated with a common sac, occupying the place of the sinus of the kidney: these cells became progressively smaller as they were situated lower down in the tumour, and in the one which occupied the place of the pelvis were four calculi, of the size of nuts, black and polished; but this colour depended only upon a thin coating of dark matter, with which they were as if varnished, and which subsequently dried and fell off in scales, leaving the calculus of a yellowish brown. The ureter ended at the same cell, but its internal mouth could not be discovered. The entire tumour was covered externally by the peritoneum, at its fore, and in a great part of its posterior part. The cyst internally was lined by a reddish membrane, soft, beset with little glandular bodies, covered with viscosities, and which was supposed to be the same mucous membrane, which in the natural state lines the pelvis and calices. Between these two was found cellular tissue, in some parts abundant, in others rare. The ureter arose from the inferior and internal parts of the tumour; it was dilated to about eighteen lines in diameter: a probe could not be passed into it from the tumour, and the spot where it terminated

at the bladder was occupied by a scirrhus, rough tubercle, so as to shut up the opening at this extremity. Internally, it was covered with a mucous membrane, a little inflamed. The renal vessels did not appear materially enlarged. The aorta, though pressed upon anteriorly by the tumour, was sound.—The walls of the bladder were somewhat thickened. The left kidney was sound, though its ureter was enlarged to about six lines in diameter.

Another patient aged 49, treated by Corvisart, in la Charite, had a swelling in the left hypochondra: after experiencing a variety of symptoms and treatment, he died at the end of a month, partly apoplectic. The kidneys were as large as the head of a new born child, and globular; the right extending into the epigastrium, behind the stomach, descended below the superior part of the cæcum; the left extended behind the spleen to the diaphragm, and downwards into the iliac region. They consisted of a mass of vesicles, varying in size, from a pigeon's egg, to fine grains. Some were thin, of the silvery grey colour of aponeurosis, and contained a fluid slightly citrine coloured; others thick, less transparent, contained a brown fluid; others again were quite opaque, white, and contained a sort of thin bad pus. All, when opened, offered internally the bright polish of the serous membranes, with a slight reddish injection. They occupied the whole substance of the kidney, without communicating with one another, and externally they were covered by the tunica propria, which was entire. The termination of the tubular substance and papillæ could no longer be recognized, but the remains of the calices were found, and the pelvis in a natural state; the ureters and bladder were also sound, as also the emulgent vessel, till they reached the tumour.

Ballonius relates that the left kidney of a widow, who died of nephritis, was as large as that of an ox, and contained a little sanies and a small stone. During life it formed a hard tumour in the hypochondrium, which had been mistaken for the spleen in a state of induration. The right kidney was so small that it was with difficulty discovered.

M. Boyer quotes an exceedingly interesting case from the history of the Royal Society of Medicine of Paris. A woman had a tumour in the right side of her belly, which was thought to be engorgement of the mesentery. After death, however, it was found to be the right kidney forming a soft membranous mass, eight inches long, and five thick. It contained much serum, and four pretty large calculi; and was composed of numerous membranous cells, which opened into one another. To discover the left kidney it was necessary to follow the ureter,

which conducted to a small membranous sac under the diaphragm, which contained some cells a little thicker than those of the right kidney; in which was contained a little turbid serum, and a calculus as large as a pea. It was impossible to distinguish the difference of the substances in the two kidneys. We must not think of quoting more of the instructive cases brought together under the head of tumours of the kidneys, nor, indeed, of the general reflections which M. Boyer hazards upon this highly interesting subject.

Renal Calculi have been observed to form readily in fat individuals, who eat much, and who lie long in bed in a state of health; or, who are compelled to lie long on their back in consequence of such diseases as paralysis, or fractures of the lower limbs. Most of our readers will recall the case mentioned by Van Sweiten, of a man who never had experienced any symptoms of stone, but who was attacked with a calculous nephritis, after having lain two months and a half on his back, without changing his position, for a cure of a fracture of the thigh. After suffering severe pains, he passed a small rough calculus by the urethra. It is well known that Sydenham, during confinement for the gout, became subject to calculi. The small rough stones which are moveable in the calices and pelvis irritate these organs, and cause the most lively pains, while those which are large and immoveable, dilate the cavities of the kidneys, alter their organization, destroy their parenchymatous structure, and convert them into cells, containing turbid purulent urine and calculi. But what is very remarkable the kidneys have been found thus destroyed in individuals who never experienced pain, nor passed gravel, pus, or blood in their urine. Bonnet relates that at the inspection of the body of a prince, the right kidney was found as large as a child's head, and contained a stone of three inches and a half in diameter; a large and deep abscess filled with yellow foetid pus was found under the psoas muscle; and the left kidney which was enlarged, contained at least one hundred small calculi. During life this person was never known to complain of nephritic pains, to pass gravel, or to have difficulty in voiding his urine.

The symptoms of stone in the kidney are often obscure. Galen tells us, that having felt an acute pain in the track of one of the ureters, he believed that he had got calculus in the kidneys; but the pain having totally disappeared after an injection of the oil of rue, he abandoned this opinion. Boerhaave committed a like mistake, in attributing the pains of a lumbago to stone in the kidney. Other affections of the neighbouring parts also lead to confusion in the diagnosis of the complaint. Schirr-

hus, abscess, and stones in the pancreas or mesentery, schirrus and displacement of the spleen, tumours in the intestines, &c., have been mistaken for nephritis, arising from calculi. Hysteria also often simulates this disease, presenting pain in the same seat and track, accompanied by suppression of urine, nausea, and bilious vomiting. To prevent mistakes on this head, we ought, according to M. Boyer, to inform ourselves whether the parents of the person were subject to calculi, whether gravel or small calculi passes by the urethra; if the invasion of the pain and the other symptoms has occurred after a severe exercise or a violent shake, and if the urine rendered is red, sanguinolent, or like a decoction of coffee.

The symptoms of calculous nephritis usually come in fits of variable duration, sometimes persisting a few hours only, at others for several days. The urine generally more or less suppressed during the accessions; during the remissions it again flows, but is coloured, muddy, glairy, or gravelly. If the symptoms persist long, inflammation is the inevitable consequence, which if it does not yield to the proper remedies, ends in suppuration and ulceration of the kidney. The patient has then irregular fever, successive heats and chills; his urine is troubled, scalding, and loaded with pus and mucus. It has been observed that if, in such a case the urine becomes clear and limpid, these pains, feeling of weight in the loins, and other symptoms are redoubled until the discharge of the pus be re-established.

Renal calculi are always most troublesome in people advanced in years, because the gravel is apter to be retarded in the renal cavities, and to increase rapidly in consequence of the great superabundance of uric acid in the urine of old people.— They are also more dangerous in sanguineous, bilious, melancholy, and very irritable individuals, than in others. The danger is still greater when the accessions are intense and return at short intervals. Indeed, when there is passing of blood and pus in the urine, with slow fever, it is seldom that the disease fails ultimately to end fatally, though the sufferings of the patient are ordinarily protracted through a long period.

At the first accession of a calculous nephritis, we are recommended to bleed freely, and employ scarifications, or leeches over the region of the affected kidney, to prescribe diluent and mucilaginous drinks, such as decoction of linseed, with nitre dissolved in it; with baths and embrocations. M. Boyer speaks highly of a liniment composed of an ounce of almond oil, half an ounce of laudanum of Rossea, and half an ounce of althæa ointment, rubbed over the loins, repeated every two or three

hours, and the parts afterwards covered with two or three folds of flannel, dipped in a decoction of poppy heads. After the bowels are evacuated, emollient injections retained in the intestines are found to be useful. M. Boyer prohibits all active diuretics and purgatives during the accession. If suppuration takes place, we are to determine the pus towards the urinary passages, by means of active diuretics, taken in large doses.—For ourselves, we are totally at a loss to perceive the utility of this treatment, for if the abscess has any communication with any part of the urinary passages, the pus will make its way into the bladder, independent of the irritation of active diuretics, and if it does not communicate with these passages we are at a loss to perceive upon what principle M. Boyer thinks that diuretics will establish this communication. Ulcers, as we have said, usually succeed to abscess, and are said by Boyer to be next to incurable; but in complication with these ulcers, we have also sometimes abscess forming in the region of the loins or ileum. When the purulent matter is confined within the pelvis or calices of the kidney, it never produces evident tumour externally; but what occurs most ordinarily, is that the inflammation excited by rough, unequal stone, extends even to the surrounding cellular tissue, in which the kidney is imbedded, produces suppuration there, disorganizes the already inflamed and ulcerated kidney, so that the stone comes to be lodged in the midst of an abscess, which forms between the peritoneum and abdominal muscles, and sometimes presents a tumour in the region of the loins, in which fluctuation is felt, and which, according to Boyer, and indeed, all experienced surgeons, ought to be opened, and the stone and matter evacuated. It has been proposed to cut into the kidney, and extract calculi, if, even when no abscess had formed, the symptoms of their pressure were quite certain; but the difficulties and risk of such an operation are so manifest, that no man of ordinary sense and humanity will readily undertake it.

There are some examples recorded of abscesses of the kidney bursting spontaneously, and the calculi being thus discharged; but these cases ought not to deter us from opening such abscesses as soon as we are certain of fluctuation, as the prolonged lodgment of the matter only augments the disorganization of the kidney, and is apt to form intractable sinuses in the surrounding part. When the accumulation of pus and urine is confined to the substance of the kidney the practice is doubtful, and the existence of the abscess seems difficult to determine. One of the principal signs is a doughy or œdematous feel of the integuments, but it is by the comminative and rational symptoms chiefly that

the surgeon is to judge ; but we presume to think, that it will be rare indeed, that any thing like certainty can be attained on this head ; and even though the surgeon is certain of this deep-seated abscess, we think it would be a better practice, unless the symptoms were very urgent indeed, to attempt to bring the matter nearer to the surface before making any attempt at opening the abscess.

To prevent the formation of renal calculi, M. Boyer recommends the daily use of mild diuretic drinks, mixed with a very small quantity of white wine, which usually renders the urine clear, and almost aqueous. It has been observed, that if those persons whose urine deposits a great quantity of very fine red sand, take 20 or 30 grains of calcined magnesia, on going to bed, that the urine in the morning will be much more clear and limpid. But the use of the magnesia must be continued perseveringly to have any lasting effect.

The presence of worms in the kidneys of several animals, and among others, man, is a fact which has been repeatedly observed. Dogs, however, seem to be more subject to them than any other animals. Morgagni tells us, that Valsalva, enamoured with the study of anatomy, dissected a dog, in which he found a body resembling a kidney exteriorly, but which contained under its external membrane a thin glandular shell, under which was a cavity, lined with a smooth membrane. In this cavity was a worm, three ells long, and larger than an ordinary writing pen. Blasius found in the kidney of a very meagre old man, two worms of the length of a cubit, reddish, distended with watery fluid, and which seemed formed of a number of rings jointed together. Lusitanus mentions his having seen in a military hospital in Spain, a robust young man, who was subject from infancy to severe pain in the kidneys, and who died in a state of marasmus. The body was inspected in the presence of many physicians, and some living worms were found in the kidneys, of a light green colour, and half the length of the index finger. As to the numerous instances recorded of worms issuing by the urethra, Morgagni observes, that most of them were mere polypus concretions, and that others were not produced in the urinary organs, but had got thither by perforating the intestines.— Thus, James Spon mentions the case of a merchant of Lyons, who, after the ordinary symptoms of a nephritis, passed a large quantity of bloody urine, at the bottom of which was found a body a foot long, which was at first mistaken for a worm, but which a more attentive examination discovered to be altogether similar to the polypi, which form in the cavities of the heart. Kellner also gives the history of a man, who, after acute pains

in the loins, extending to the pubis, and violent tenesmus of the bladder and rectum, passed a body, which was at first taken for a lumbricus, but one more minute search, Keillner found that it was nothing else than coagulated blood, contained in a kind of thin tunic.

A very curious case is recorded by a M. Moublet, in the *Medical Journal* of Paris, Vol. IX. A child had an abscess in the right lumbar region, which was opened, and much pus, mixed with blood, was discharged. The discharge continued abundant for twelve days, and after a considerable lapse of time, the wound healed. Some months after, however, the cicatrix became soft, swelled, and fungous, with pain and tension in the neighbouring parts. The urine became suppressed, and the child fell into convulsions. The cicatrix was laid open, and a new flow of pus took place, after which the symptoms disappeared. The opening became ulcerous, and after a time again closed, and again required to be opened, when it remained fistulous. In fine, the child's mother one day examining the fistula, perceived a living worm in it, which she drew out, and preserved to shew to the surgeon. This worm lived afterwards three years. The surgeon the same day extracted another, also alive, which was four inches long, and the size of a goose's quill. Two days after, the child could not pass his water, and the bladder was tense. M. Moublet attempted to introduce a catheter without success; he injected some tepid oil into the urethra, with a view to facilitate the issue of the gravel, which he suspected intercepted the passage of the urine, and put the child into the warm bath. On again attempting the sound, he perceived a foreign body at the extremity of the urethra, which he seized with a pair of forceps. He found it to be a worm, in life, of the length and figure of those which had been withdrawn from the fistula. On the following night, the child passed another, after which the urine flowed easily, and the child got completely well. M. Boyer believes that these worms were lumbrici, and were engendered in the intestines; and that the fistula by which these two first were discharged, did not communicate with the kidney.

Two species of Renal Hydatids have been recognized by authors, the first known by the name *ageticus hydatiformis*, is nothing else than a serous cyst, situated usually in the thickness of the tunica propria of the kidneys; the other consists in lymphatic vesicles, single or in clusters, free in their circumference, and which are regarded as being actually animated.

The first are met with very often in old people; they are thin and transparent, and contain usually a colourless fluid, though

in some cases given by Morgagni, it was reddish, and had a urinous smell. Often they increase so much, and press so much upon the substance of the kidney as to destroy it; and when this takes place in both kidneys, the patient almost always perishes with an ascites.

The live hydatids are said to be met with in the mamiferous animals only; sometimes they are found in the substance of the different organs, upon its surface, or under its proper membrane, in the interstices of the muscles; but they are never found floating freely in the intestines, or any other natural cavity, being always enclosed in cysts, which separate them completely from the substance of the organ which contains them. Sometimes these cysts are simply membranous pouches, and contain the hydatids in greater or less numbers: contained in great numbers in one cyst, is the state they are usually met with in man. The cysts may acquire an enormous volume, and be quite gorged with hydatids, or they may float freely in the liquid which the cyst contains. When very closely heaped together, they generally destroy or decompose one another, and then it is impossible to ascertain their primitive organization; whence, probably, have arisen the numerous doubts with regard to the vitality of these animals.

Hydatids are rarely met with in the kidneys; sometimes they are found adhering to the internal membrane of the calices, pelvis, or ureters, where, as they augment in bulk, they are detached, and are expelled with the urine, some in an entire state, others broken, and presenting nothing but the remains of a vesicular bag. When too large to pass along the urinary passages, they accumulate in the pelvis and calices; dilate and change in some sort the organization of the kidney, its parenchyma being compressed, thinned, or even totally destroyed, so that what remains of this organ is a mere cyst, filled with urine and hydatids. Such a degree of disorganization cannot occur without giving rise to nephritic pains, retention or difficulty to pass urine, and the other symptoms which characterize calculous nephritis; at the same time, it is impossible to pronounce any certain diagnostic, unless hydatids have passed by the urethra. M. Baumes recommends anthelmintics and mercury against hydatids; but according to M. Boyer, we can do little in this complaint, unless we instigate the symptoms by warm baths, mild diuretic drinks, and so forth; cases of cure of persons who were known to have hydatids in the kidneys, are extremely rare.

The Ureters are subject to stricture, dilatation, spasm, inflammation, and calculi. If the urine passes not at all, or but in small quantity along the ureters, they become spontaneously

constructed like all the other excretory ducts. When a stone also gets engaged at their origin, so as to intercept the course of the urine, we have the same result, in all the parts between the stone and the bladder, while the part above is preternaturally dilated. Meckel records the case of a woman in whom the kidney was found changed into a small fleshy mass, in which the tubular part was altogether wanting, and the ureter was converted into a solid membranous cord, without any cavity. The right kidney was double its renal size, and contained fourteen calculi, the largest of which occupied the pelvis. In a woman, inspected by Morgagni, one of the kidneys was wasted, but its pelvis enlarged; the other kidney was enlarged; its pelvis, also, was more capacious than ordinary, but the ureter was so much constricted, that air was with difficulty blown through it.

Stricture of the ureters may result from acute inflammation, or from the callous thickening of their walls, which chronic inflammation sometimes occasions. Schirrus of the rectum, also of the uterus or ovaries; excessive distention of the largest intestines; the gravid uterus; in short, any cause which may exercise permanent pressure upon the ureters produces their constriction, and consequent retention of the urine in the cavities of the kidney. Obliteration is sometimes a fault of conformation. In a fœtus mentioned by M. Boyer, which died during labour at the full time, the ureters from the bladder, to within an inch of the kidneys were hollow cavities as usual, and about a line and half in diameter, but the remaining inch formed an impervious cord, not thicker than the fourth of a line. The kidneys were larger than ordinary, and on removing the tunica propria, the substance of the kidneys was found in great part composed of membranous vesicles of different sizes, round and oval, and filled with a thick watery fluid, possessing a urinous odour.

Excessive dilatation of the ureters is almost uniformly the consequence of obstruction by means of calculi, pus, clots of blood, hydatids, &c., to the passage of the urine from the ureters into the bladder. Stricture of the inferior part of the ureters causes accumulation of urine, and consequent dilatation of the portion between the stricture and kidney. Thus, Chopart relates the case of an individual, in whom the vesical openings of the ureters were strictured, while the rest of their extent was as large as the finger; the bladder was empty and thickened, and the calices and pelvis much dilated by the urine which they contained. According to Petit, if the obstacle to the course of the urine exist at the neck of the bladder, or in the urethra, all the urinary passages are successively dilated; the valvular construction of the termination of the ureters resisting only to a

certain point. In an old woman who died with the urinary organs thus gorged, Morgagni pushed air into the bladder, which escaped by an incision made into the bladder, which escaped by an incision made into the pelvis of one of the kidneys. In some cases the orifice by which the ureters terminate in the bladder, are excessively dilated. In Chopart's work we find the case of a lad, aged 19, who had stone in the bladder, and who complained of great difficulty in making water. Pelletan introduced a catheter, but without feeling any stone; he had great difficulty in moving the instrument in the bladder. There issued only about half a glassful for 24 hours. The same day, at mid-day, another surgeon introduced the catheter, and a pint of clear urine was withdrawn. The patient died, and some dispute arose as to the cause of the difficulty which M. Pelletan had experienced in moving the instrument in the bladder. M. Pelletan thought that the instrument had been engaged in the orifice of one of the ureters; others *charitably* supposed that he had made a false passage. On inspection the bladder was found large, although it contained almost no urine; its walls were nearly an inch thick, and a calculus, as large as a hen's egg, was found lodged near its neck. The orifices of the ureters were so much dilated, that they received the end of the finger with ease. In another case, from the same work, Pelletan says that, having introduced the sound, for the purpose of performing lithotomy upon a child in whom the presence of a stone had been previously established beyond doubt, he was unable to feel any foreign body, although he used every contrivance for that purpose. After some days he proposed again to sound the child, but this was obstinately refused. After some time the child died, and, on inspection, the stone was distinctly felt across the thickened walls of the bladder. M. Pelletan then introduced the sound, and having raised the intestines, he found that it had passed into the right ureter, which, as well as the left, was more than an inch in diameter. On cutting open the bladder, the orifices of the ureters were found so large as to admit the little finger. The stone was of immense size. In those cases where the presence of a calculus has been ascertained, and where we fail to strike it in consequence of the instrument passing into the dilated orifice of one of the ureters, M. Boyer advises us to employ a sound very much curved, and of which the beak is somewhat elongated, and to carry it forward directly in the middle line of the abdomen, with the handle a little depressed upon the thighs.

The dilatation of the ureters is sometimes carried the length of forming a tumour externally. Desgrange reports the case

of a lady, who, some years after labour, became dropsical, with dull, gravitating pain in the left iliac region. After some time, a slight circumscribed swelling was perceived there, in which there was obscure fluctuation. This was thought to be dropsy of the left ovary. Sometimes the humour disappeared, or became much less : at others it increased greatly. The patient complained of occasional difficulty in passing water, and ultimately died. On inspection, the left ureter was found forming a tumour, which extended along the psoas muscle, from the sacro-iliac symphyses to nearly as high as the kidney. On compressing this tumour, a little stringy part of the fluid which it contained, flowed into the bladder. Its walls were thick, reddish externally, and of a membranous texture, and lined by a smooth membrane within. At the point where the ureter bends a little outwards to pass into the pelvis, the ureter became of the natural size, and at this place presented a circular fold of its internal membrane, which performed, in some degree, the office of a valve. The orifice by which the ureter terminates in the bladder was either not examined, or no morbid appearance was observed.

These tumours may be mistaken for chronic abscess, but if by pressure we can employ them, and the desire to void urine follows, we may be pretty sure of their nature. The other symptoms of a urinary affection ought at the same time to be taken into account. A man, aged 45, was admitted into la Charite, for a contusion of the thigh. He had the left testicle indurated, but he never had experienced difficulty in voiding the urine, or pain in the region of the kidneys. On examining the left iliac region a tumour was felt, which was painful on pressure, and habitually accompanied with a dull pain. M. Boyer, believing that it was engorgement of the cellular tissue which surrounds the spermatic vessels, applied emollients, and it augmented insensibly, so as at the end of three months to elevate considerably the abdominal parietes. Laterally, it extended from the last false ribs to below the crest of the ilium ; it was of an oblong form, and larger superiorly than inferiorly, and evidently contained a fluid. As the patient had never experienced any symptom of a urinary affection, M. Boyer was led to believe it to be a chronic abscess, and accordingly he opened it, and gave issue to three pounds of a citrine coloured liquid, which was ascertained by analysis to be urine. The puncture healed in 24 hours, and at the end of 15 days the tumour was as large as before. A second puncture was made with the same results, except that the wound degenerated into a fistula, by which the urine continued to flow. After three months the patient died, as the fistula was recognized

to communicate with the ureter, which was enormously dilated, and its walls at least three times in thickness. The enlargement was greatest towards the kidney, and went on diminishing towards the bladder where the ureter became ligamentary, and structured so as to admit with difficulty the point of a very fine probe. These affections are regarded by M. Boyer as incurable, and opening the tumours he thinks can only accelerate the death of the patient.

Stones are rarely formed in the ureters ; M. Boyer believes never, unless some foreign bodies have accidentally got there, as was the case with a soldier who died in the hospital at Lille.— This patient had fever, tension of the stomach, and acute pain in the right side of the epigastric region, where an inflammatory fluctuating tumour at last appeared, which being judged to be an abscess was opened, and pus of a bad odour followed by urine, flowed out. The urine continued for a long time to flow by the opening : the patient died, and on inspection the epiploon was found destroyed, the right ureter ulcerated, filled with pus, and containing a pin incrustated over with calculous matter.—When the renal calculi are large or pointed, they pass with difficulty along the ureters, produce intolerable pains, and sometimes even are arrested there. Le Dran found, on opening the body of a woman, the ureter so much dilated as to contain about three ounces of sand and small calculi, through which the urine filtered. A single calculus is sometimes found at the superior part of the ureter. Tulpius gives us the drawing of a large oval calculus which he removed from the pelvis of the left kidney of a woman aged 40, the pointed extremity of which projected into the superior extremity of the ureter, and completely intercepted the passage of the urine. But the part of the ureter where calculi are more easily arrested, is at the oblique part, where it traverses the coats of the bladder, and here the stone sometimes projects into the bladder, so as to be felt by the sound. Calculi, even as large as small nuts, often make their way from the kidney into the bladder in a very short time, and without producing much pain, fever, or ischuria. Ordinarily, however, if the stone is large or pointed, there is severe pain extending to all the urinary organs, and the thigh of the affected side ; retraction of the testicles, the pulse hard and frequent ; the patient has spasms, even sometimes convulsions, dysuria, and stranguary. If the stone does not pass speedily into the bladder, the inflammation produces abscesses in the ureters and kidneys, ulceration, and often death.

MONTHLY SUMMARY

OF PRACTICAL MEDICINE.

I. ANATOMY AND PHYSIOLOGY.

On the Specific Action of certain Substances on particular Portions of the Encephalon. By M. FLOURENS.

It is considered that certain substances introduced into the digestive organs, or into the vascular system, act chiefly or specifically on the brain. But it has not yet been explained how these substances, acting all on the same organ, produce, nevertheless, phenomena essentially different. M. Flourens, whose former experiments tend to shew that the encephalon is composed of several parts, performing essentially distinct functions, entertained the idea of ascertaining, by direct experiments, the cause of the diversity of effect just alluded to, in the proper or specific action of each of these substances on each of the different parts of the brain.

It appears from these experiments of M. Flourens:—

1st, That, up to a determinate dose, opium acts exclusively on the cerebral lobes; belladonna on the corpora quadrigemina, and alcohol on the cerebellum.

2d, That the physical results of the action of each of these substances on each of these parts are absolutely the same as those from mechanical lesion of these parts. As, for example, when a substance acts only on the lobes of the cerebrum, the functions of those lobes are alone injured: when on the cerebellum solely, those of this organ are deranged; and when on the corpora quadrigemina, those of this organ are injured, &c.

3d, That the action of each substance always leaves, after death, and points out, even during life, signs which may serve to distinguish the affected organ from the others.

4th, That camphor, æthers, &c., act in a manner analogous to alcohol; the watery extracts of henbane and bitter lettuce, &c., in a way similar to opium, &c.

The experiments on which these inferences are founded have been repeated before MM. Cuvier, De Humboldt, Portal, Du-long, and Dumeril, who are commissioned by the Institute to report upon the *Memoire* of M. Flourens.—*Rev. Med.*

II. SURGERY AND MIDWIFERY.

M. Roux on the operation of the Trepan.

M. Roux, at the commencement of this paper, observes that the application of the trephine is not in our time had recourse to but with extreme reserve, and asks whether the disrepute into which it has fallen is to be considered amongst the improvements of our art, or whether, in the treatment of injuries of the head, the practice of modern times is attended with more fortunate results than the ancient practice, when trepanning was so much in vogue? Without stopping to settle this point, he proceeds to relate a case attended with some novel and singular circumstances, in which a purulent abscess had existed for four years in the cavity of the arachnoid membrane and communicated externally by a fistulous opening.

The subject of this case had nearly completed his eighteenth year. At the age of thirteen or fourteen, he received a blow from a stick on the head, between the occiput and the parietal protuberance of the right side. No distinct account could be obtained of the first effects which resulted from the injury; but it appears that the child recovered from the first consequences of the contusion, and resumed its usual occupations and amusements. After the lapse of some months, however, some cerebral symptoms manifested themselves, which probably consisted in a degree of low chronic inflammation of the meninges, for it had been of an acute nature, the consequences would in all probability have been fatal, as it terminated in suppuration. Sometime after these symptoms appeared, an abscess formed externally, and an incision was made to evacuate the matter. The wound made by this incision diminished in size, but never closed completely; it became fistulous, and continued so uninterruptedly till the period when the patient came under the care of the author. This fistulous opening constantly discharged a considerable quantity of matter, more indeed than might have been expected, considering the smallness of its diameter, and the thinness of the soft parts which covered the cranium. Frequently the suppuration became less abundant, at least the discharge of pus was less considerable from the opening, and on these occasions the boy complained of heaviness about the head, and showed a great propensity to sleep; though the symptoms did not absolutely amount to coma, they were sufficiently indicative of compression of the brain from accumulation of purulent matter internally. On the suppuration being re-established,

and the flow of pus returning, these unpleasant effects disappeared, but the patient nevertheless did not enjoy perfect health: he was weak and emaciated, was of small stature for his age, and inclined to indolence and apathy,—in short, he was falling away every day. M. Roux introduced a probe into the fistula in the integuments, but instead of meeting with any resistance from the bone, the instrument got into another opening, and penetrated directly into the cranium for more than an inch, without causing the least pain to the child. On inclining the probe in different directions, it was found to glide with ease under the bone, particularly upwards and backwards. This examination satisfied the author that a free cavity existed under the cranium, which furnished the matter, and he had an idea that besides the principal orifice, the bone was pierced with numerous holes in consequence of caries or erosion of its inner surface,—cases of which are related by Pott, some of them rather remarkable, in which the trepan was successfully employed.

Under these circumstances the operation of trepan was proposed, and readily consented to. The surface of the parietal bone, where the opening was situated, was exposed, but the other steps of the operation were deferred till next day, a delay which was of no consequence in this case, and which allowed the bleeding to cease, and rendered the rest of the operation less embarrassing to the surgeon. The examination by means of the probe was renewed, and finding that it penetrated farthest in the direction upwards and backwards, the crown of the trephine was first applied behind, a little above, and close to, the fistulous opening. It was expected that the bone would be found very thin; but on the contrary, it was thicker than it usually is in subjects of that age. When the piece of bone included in the trephine became moveable, the purulent matter began to escape from the interior of the cranium; a much greater quantity flowed out when its passage was rendered more free by the complete removal of the piece. It was calculated that nearly three ounces of yellow pus, thick, and without any bad smell, having all the properties of what is called good laudable pus, escaped. It was remarked that the pouch which contained it was not entirely emptied; for though the surface of the brain which formed the base of the cavity appeared to approach immediately towards the opening in the cranium, a considerable interval still existed between these two parts. It was only after the lapse of time, and by slow degrees, that this interval disappeared, that the void filled up, and that the pouch which had been so long the source and receptacle of the pus, was entirely obliterated.

It was evident from the moment of the operation that the accumulation did not exist immediately under the parieties of the cranium; the dura mater, and the arachnoid which lines its internal surface, presented a circular perforation which readily admitted the extremity of the fore finger. The brain was seen at the bottom of this cavity, red and depressed, but its convolutions scarcely distinguishable.

Finding that the source of the matter was thus circumscribed, this single application of the trephine was deemed sufficient, the wound was lightly dressed, and the patient put on a strict regimen, leaving the rest to nature.

For the first fortnight the discharge continued very abundant, but after this period it gradually diminished. The exposed portion of the cranium, the edges of the perforation made by the trephine, and all around it, presented the rosy hue, which, when no exfoliation is to take place, precedes the appearance of cellular granulations: these granulations were very apparent on the twentieth day; by the thirtieth, they were confounded with those proceeding from the divided portions of integuments, forming a continuous surface with them; and as similar granulations were developed both from the dura mater and from the arachnoid, the whole forming a pretty thick layer, the movements of the brain, isochronous with the beating of the arteries or sistole of the heart, were at this period very obscure. By the fortieth day, the movements had become imperceptible; no pulsation could be distinguished at the bottom of the aperture in the walls of the cranium, and that opening had assumed the form of a hollow cone or cup. At this time the patient had an attack of pleuritic and gastric symptoms from imprudence in diet, which retarded the cure a little, so that it was not till the sixtieth day, or two months from the operation, that the opening in the cranium was entirely filled with granulations; and in a fortnight more, the wound was completely cicatrized.

Delivered from the cause of his troubles and sufferings, the young man resumed his occupations; in a few months he grew several inches, and his body acquired a remarkable degree of strength and a flourishing state of health succeeded to the languor and decay which for so many years had been kept up by the suppuration in the interior of the cranium.—*Med. Chir. Review.*

M. BECLARD on *Extirpation of the Parotid Gland.*

L. F. Clout, a paper stainer, was admitted into the Hospital 'La Pitie' on the 19th of August, 1823, on account of a scir-

rhous ulceration of the right parotid gland. This man was aged forty-seven years, of an apparently good constitution, and of a sanguineo-nervous temperament. The disease had commenced eight years before ; but, from being long indolent, and comparatively small, it had rapidly increased, and become the seat of lancinating pains : it had also lost its mobility. On admission into the hospital, this cancerous tumour possessed a very considerable elevation. At its superior margin it raised the lobe of the ear, and appeared to involve the cartilaginous portion of the auditory canal. It extended downwards more than an inch from the angle of the jaw ; backwards it adhered to the sterno-mastoid muscle, and its anterior portion covered a great portion of the masseter. It was ulcerated in two situations, and had but little motion. There was no appearance of cancerous cachexia. The patient desired an operation, and M. Beclard performed it in the following manner :—

The patient having been placed on his left side, the tumour was inclosed by two curved incisions, the one made at the inferior and posterior part, the other at the anterior and superior part of its circumference. That part of the tumour placed over the masseter was first dissected off, from before backwards, with sufficient ease. It was next attempted to detach it from below upwards ; but a projection of its substance plunged deeply behind and beneath the internal pterigoid. To endeavour to remove this portion of the scirrhus at the commencement with the rest of the tumour, would be to expose the operator to the risk of hæmorrhage, which might be difficult to repress during the operation ; M. Beclard therefore decided to dissect upwards, by striking the bistoury into the structure of the tumour itself, on a level with the projection, whilst the instrument divided before and behind the cellular tissue connecting it to the adjoining parts. Half the inferior circumference of the cartilage contributing to form the auditory canal, which was enveloped in the diseased part of the parotid adjoining, was removed with it in this first dissection. Numerous arteries were tied at this stage of the operation ; and M. Beclard continued the extirpation of the rest of the tumour. A portion of the anterior margin and internal surface of the sterno-mastoid, being converted into a scirrhus substance, was excised with the bistoury. The projection situated behind the jaw was removed in successive slices : nearly the whole scirrhus mass was already dissected away in this manner, when a large jet of arterial blood announced the lesion of the external carotid, or the division of one of its principal branches. M. Beclard placed the fore-finger of his left hand on the place whence the hæmorrhage proceeded, seized

the bleeding vessel with a forceps, and passed a needle with a double ligature around it; an assistant tied the vessel above and below the wound in it, which was lateral. The artery was held forwards and outwards whilst he completed the extirpation of that part of the tumour which remained in the pit formed by the ramus of the jaw. One small projection of the tumour, placed before cervical vertebræ, was only left, on account of its proximity to the internal jugular vein. M. Beclard contented himself with passing two ligatures beneath this part, by means of a needle, and with tying the one at its superior, the other at its inferior extremity.

The considerable wound which remained after this operation presented, at its anterior part, the masseter as if dissected, and the labial artery denuded but not divided; at its posterior part, the mastoid apophysis, and the sterno-mastoid, with its interior and anterior portion removed; internally, the styloid apophysis, the external carotid surrounded with two ligatures, the stylo-hyoide muscle, and the digastric; and the small portion of the tumour which was tied formed the bottom of the wound, which opened upwards into the meatus auditorius externus. The wound was dressed forthwith.

The extirpated tumour presented a scirrhus texture, mixed with a small portion of tuberculous matter. It was impossible to distinguish the structure proper to the gland itself.

No particular occurrence took place during the first days of the treatment. All the right side of the face of the patient remained a stranger to any sort of expression, except what was occasioned by the actions of the left side producing some degree of motion in the soft parts of the right. The right eye remained continually open, which, owing to the irritation and dryness, of the conjunctiva thus occasioned, gave rise to a slight but obstinate ophthalmia. At the period of the suppuration of the wound, the patient experienced deafness of the same side, owing either to inflammation having been propagated to the internal membrane of the ear, or to the quantity of the discharge and swelling of the adjoining parts. The suppuration was going on kindly, and healthy granulations covered the wound, when, on the twelfth day, the patient experienced rigors, followed by heat and fever. Phlegmonous erysipelas attacked the surrounding parts, and was followed with great delirium. General and local bleedings, during the three following days, caused but slight amendment. After this period the erysipelas on the face terminated by desquamation; but an abscess formed deep below the right trapezius muscle. The pulse remained frequent, and the derangement of the mental faculties continued. For sever-

al days the discharge was excessive. A counter-opening was made, and graduated compression was applied, which occasioned adhesion of the parietes of the abscess. The ligatures placed on the external carotid, and that part of the tumour which was tied, came away. The wound was approaching to entire cicatrization, the fever subsided, and the strength and appetite returned : but to the preceding delirium succeeded taciturnity, which was only broken by paroxysms of rage—mental alienation had supervened to the febrile delirium.

Three months after the operation, the wound was closed, unless near the ear, where it had assumed a character denoting a return of the cancer. The patient was still maniacal, and seemed affected with a chronic inflammation of the membranes of the brain. He died three months and three weeks after the operation.

On dissection, the external carotid artery was observed to terminate in cellular tissue resulting from the cicatrization of the wound. There appeared no vestige of the parotid. The internal jugular vein was obliterated at the same height, and seemed to commence anew lower down by communicating with the superficial branches. The corresponding lateral sinus was not obliterated. Some pus was found in the meatus auditorius externus. The membrane of the tympanum was sound. There was a marked injection of the pia mater, and of the choroid, which was redder than the choroid plexus. A serosity was found in the ventricles, suspending particles similar to those deposited by some red wines.—*Archives Generales.*

Dr. Granville on Puerperal Fever.

Two errors have crept into the practice of physic with regard to the disease which attacks women during the first month after gestation, called *peritonitis puerperarum*, or more commonly, puerperal fever. In the first place, it has been improperly asserted, and the same has been recently repeated, that this fever occurs about twenty-four or thirty hours, and seldom later than four days after delivery ; although the case is not so, for instances of attack, even so late as on the 15th and 20th day after delivery have often occurred, and occur daily. In the second place, this very identical complaint has been generally confounded with another, though a very distinct one in its nature, to which lying-in women are also not unfrequently subject, and which should be called the *intestinal fever*. Indeed, the author

to whom I have just alluded, (Dr. Armstrong,) does not even hint at the possibility of lying-in women being attacked by such a fever; for, in the enumeration of the febrile complaints which he supposes likely to be mistaken for the puerperal fever, no mention whatever is made of the former. Other writers have been guilty of the same omission; and indeed, with the exception of Burns, who has slightly touched upon it in his Principles of Midwifery, I am not aware that any reputable author has ever made a distinction between these two fevers. Yet nothing is more necessary. It is in consequence of this oversight, that bleeding, the heroic remedy for the former of these two complaints, has been employed where no symptom seemed to require it—and, *vice versa*, that it has been neglected, when bleeding alone could have saved the patient. In the course of a pretty extensive practice, during two years, at one of the largest and best conducted Lying-in Hospitals in Europe, and while following some of the first practical accoucheurs in this metropolis and in Paris; and subsequently among the patients of the Westminster General Dispensary, as well as among my own private patients, I have been taught to distinguish these two complaints from each other. so as not to misapply, I hope, the means which experience and medical reasoning suggest for their respective treatment. The medical profession are aware, that in some hospitals, great mortality has occurred from febrile complaints, which have been indiscriminately considered as puerperal fever; and a very recent example might be quoted, were it necessary, in illustration of this assertion; but the aim of this work is not to record what has *not* been done, but what *ought* to be done, to establish a clear diagnosis of the two complaints, and to adopt a correct and effectual method of cure. I shall endeavour to do this in the clearest manner I can; and according to the observations I have had occasion to make in the several cases which fell under my notice.

Both complaints begin with highly threatening symptoms; and both can destroy the patient in a short period of time, if not quickly checked. Head-ache,—sickness at the stomach, or nausea—cold shivering fits, succeeded by heat—tumefaction and pain of the abdomen, particularly when acted upon by pressure—suppressed or diminished secretions, are the broad features by which both diseases are portrayed; and which, if consulted singly, or even conjointly, but without reference to any other circumstance, will often lead us into error in forming our diagnosis. Nor would the error be of any material importance, were the treatment alike in both disorders: unfortunately, however, the case is not so; for that which will suffice to conquer

the intestinal fever, will fail in overcoming the puerperal *peritonitis*; and the energetic means by which the latter is invariably disarmed of all its horrors, would be excessive and uncalled for in the other complaint. It is therefore of the utmost importance to the very existence of the patient, that we should seize upon even the most trifling characteristic symptoms by which the two diseases are made distinct from each other, if we wish to avoid error.

The puerperal *peritonitis* commonly seizes the patient suddenly—whereas in the intestinal fever, it will be found, that the patient has been complaining for a day or two previous to the attack. In the former, the tumefaction of the abdomen follows the developement of the pain—in the latter, exactly the reverse obtains. The lochial discharge is generally suppressed or diminished in the one—but no such change takes place in the other. Costiveness does not necessarily follow an attack of puerperal fever—it invariably attends the intestinal fever. The pulse is harder and fuller in the peritonæal inflammation—but the tongue, the aspect of the eyes and face, and the secretion of urine, present exactly the same phenomena in both diseases.—One, however, is eminently inflammatory—the other not so. Bleeding will cure the one—purgatives the other. It will be found, moreover, on inquiry, that the patient suffering from intestinal fever, has neglected her bowels during the last week of her pregnancy—or that she has not been sufficiently purged before her confinement.—*Med. Intel.*

DR. LAVAGNA on Stimulant Injections in Amenorrhœa.

In the Number of the Repository for September, 1823, we acquainted the Profession with the successful employment of stimulating injections in cases of suppressed menstruation, by Dr. F. Lavagna; and, at the same time, we pointed out the particular means which this Physician thus resorted to in these cases. In the paper of Dr. L. whence that abstract was taken, mention is made of the injection of warm white wine into the vagina having been as successful as the ammoniacal injection. Since the appearance of Dr. Lavagna's paper in this country, we have recommended both these, but only in two cases: in the one case we employed the ammonia, and it was successful; in the other the wine, but we have not yet had the means of ascertaining its effects. We may have farther opportunities of verifying the propriety of this practice, of which we think favourably; and of trying the effects of other substances when employed in the same way.—*Lond. Med. Rep.*

MR. BACOT on the Use of Mercury in Chancres.

Of all the varieties of sore which are to be met with on the genitals, none appear to me to be more clearly marked, and recognized among practitioners by their respective names, than the sloughy and phagedenic chancres, and they are both notoriously under the complete control and influence of mercury. The sloughy chancre, with marked induration about the base and edges, extends itself by a process which may strictly deserve the name of sloughing, and is often excavated in depth very rapidly : whereas, the phagedenic sore spreads quickly indeed, but it spreads rather superficially than in depth ; a narrow inflamed edge surrounds it, and it eats its way often round a considerable portion of the penis. In neither of these cases is the pain by any means remarkable ; nor does the constitution sympathise with the local complaint. Very different is that more rare form of ulcer, in which the parts are rapidly destroyed.— In this case, the destruction appears to be the result of a high degree of inflammation ; the pain is exquisite ; there is an elevated margin of a deep-red colour round the sore, which is usually situated on the glans penis ; and rigors, a furred tongue, and a full and rapid pulse, denote a great degree of constitutional disturbance. The form that this disease assumes, at its first appearance, is that of a small dark-coloured pimple ; and an attack of pyrexia commonly precedes the increase of the local complaint. In these cases I have often seen the introduction of mercury attempted, but always with an aggravation of the symptoms ; until, by general bleeding, brisk purging, and the use of strict antiphlogistic means, the constitutional symptoms have been removed ; in which event, the character of the sore becomes immediately changed, and mercury may afterwards be exhibited for the security of the constitution, if it be thought necessary to do so. It may here be remarked, that, owing to some peculiarity of habit, or other unexplained causes, a simple sore on the penis will sometimes suddenly assume a sloughy appearance, and the health become much deranged. In both these examples, but especially in the former, the exhibition of mercury is found to be practically hurtful, as well as clearly contra-indicated, from a consideration of its stimulating properties.

In the above sketch of what I shall call the inflammatory chancre, I have attempted to describe the most aggravated form of this sore, which I have had occasion to witness several times ; but it must be remembered that, although it differs in degree of violence in perhaps every individual case, still the great dis-

tinctions as to the irritability of the sore and the arrangement of the general health remain the same, and are, I am convinced, of the greatest practical importance.

There is another remark which I would wish to make in this place, which is, that all sores upon the glans penis should be watched with great caution, whether it be thought right to exhibit mercury or not, since ulceration often spreads with great rapidity in that part; and this is especially the case in those instances where the remedy has been pushed too far, or where it begins to excite constitutional erethism, which in some habits it frequently does.

I shall conclude this paper by strongly urging the necessity of a careful examination into the state of health of the patient, in all cases of syphilis, whether primary or secondary. Attention to this particular, in many of the varied and protean forms of eruption especially, will often supersede the necessity of recurring to the use of mercury, and which, if even necessary to be exhibited, would, in all probability, produce more injury than benefit when administered profusely and hastily under such circumstances. Many of those cases of anomalous symptoms that are at present to be met with in a very large, and I am afraid increasing, proportion, being to be ascribed, in my opinion, to the too profuse use of mercury in habits *ill prepared to receive it*, or to its employment under circumstances of exposure to weather or intemperance of living, in which its effects may be truly said to be more fatal than those of the disease for which it is prescribed.

I must not, however, be misunderstood, as wishing to depreciate mercury as a remedy: in syphilis, it is, undoubtedly, our firmest and best reliance; and it is in consequence of that conviction that I am anxious to have its merits properly appreciated, and that it should not have its character degraded by injudicious praise.—*Lon. Med. and Phys. Journal.*

III. PATHOLOGY AND THERAPEUTICS.

DR. SHEARMAN on Epilepsy.

In the present imperfect state of our knowledge regarding epilepsy, all our reasoning upon its causes and nature is inadequate to suggest to us, *a priori*, any curative means capable of being adapted to the various circumstances of the disease, so as to enable us to resort to them with any thing like a certainty of success. Our practice in this, as in some other diseases, is

chiefly empirical, and experience alone must be our guide in the choice of remedies offered to our notice. Of the numerous remedies extolled at various periods for the cure of this disease, one general opinion may be expressed ; no certain reliance can be placed upon them, nor has any one, in particular, maintained its ground for superior excellence, after a fair and impartial investigation of its merits. Even an enumeration of those which have successively been subjected to trial, would be both tedious and unprofitable. Credit may have been obtained by some of them, because a cessation of the disease took place during their exhibition, although they had little share in producing this cessation ; this is obvious from the numerous failures of the same medicines, compared with the few instances of their success, and from the circumstance of their ultimately falling into disuse and neglect. At the present day the cure of epilepsy is principally confided to two medicines, both of which are reported to have been occasionally successful, although it must be confessed many failures have occurred in the employment of each of them. These are the nitrate of silver and the oil of turpentine ; the one of which acts chiefly as an evacuant, the other as a tonic, and produce occasionally the same good effects as have heretofore been produced by other evacuants, and other tonics, in those cases of symptomatic disease, which, depending upon the presence of noxious matter in the intestines, or upon a want of tone in the moving powers, will speedily disappear when the respective exciting causes are removed. The medicine which, in my hands, has more frequently succeeded than any other in removing epilepsy, is the elutriated oxyd of tin, given in the dose of from ℥ij. to 3j. to an adult, night and morning, for about four days, at the end of that time giving a purgative, and again resuming the use of the medicine or not, according to its effects upon the system, or its apparent power over the disease. That it possesses powers different from, and superior to the other preparations of the same metal, I am fully convinced, and I think it deserves a trial by Practitioners, after they have been disappointed of success in the exhibition of other remedies, in which they are accustomed to place more confidence.--*Med. Rep.*

DR. SPRENGEL on *Arteritis and Phlebitis.*

Dr. S. Sprengel relates the following curious and interesting case of inflammation of veins and arteries from a wound : " A young man, lately embarked in the military service, was sent to the hospital for a wound in the right hand, which he said was

accidentally produced by a hatchet, but which was very evidently the result of design. Be that as it may, the wound was properly dressed, and every thing went on well for the first two days ; but in the evening of the second day, a violent symptomatic fever was kindled, which, though mitigated for a time by a copious bleeding, came on again with more intensity than ever, accompanied by gastric symptoms. An emetic relieved the latter. The wound now suppurated kindly, and on the fifth day there was every appearance of a speedy cure. His companions at this time persuaded him that he would be severely punished for the attempt at maiming himself, which, joined to the chagrin of being disappointed in his hopes of discharge from the military service, threw him into a low nervous fever, while an erysipelatous inflammation began to spread over the back of the wounded hand, and from that up the arm, in the direction of the great vessels. The fever now assumed the typhoid form, although the wound itself preserved a healthy appearance, and never ceased to discharge good pus. An abscess formed on the wrist, and was opened, when a great quantity of sero-sanguineous pus was discharged. On the 18th November a great hæmorrhage took place from the wound, without any apparent cause. This was soon stopped. The process of suppuration was now arrested, and the wound looked dry and shrivelled.—The patient died on the 20th November, eighteen days from the infliction of the wound.

Dissection. Nothing remarkable in any of the splanchnic cavities. Sinuses and abscesses were found along the arm. The sheath of the radial nerve was a little inflamed, the radial and ulnar arteries, from the wrist to the middle of the fore arm being filled with pus. The lining coat of these vessels was thickened, corroded, and covered with coagulable lymph. The brachial, axillary, and subclavian arteries were sound. The veins, on the lower part of the fore-arm, presented the same phlogosed appearances as the arteries. On the clavicle an abscess was found filled with ichorous pus, the bone being denuded of its periosteum, and carious. Yet there was no affection of the vessels in the vicinity of this abscess. No other morbid appearance was found in any part of the body."

The above case offers a good example of the effects of moral emotions over the physical structure of our frames.—*Med. Chir. Review.*

MR. KNIGHT on *Artificial Temperature in Phthisis*.

I transmit the following communication to the London Medi-

cal and Physical Journal, under an impression that it points out a better method of creating an artificial climate for patients with tender lungs, than any generally known ; and I write with the hope of averting from other parents, and other families, a calamity which I believe it has been the means of averting from me and my family.

The patient, who was the subject of the mode of treatment which I proceed to describe, had been perfectly healthy, though her appearance was delicate, from her birth, till she married, and had one child. Her appearance then, in her nineteenth year, became consumptive ; and, within a few weeks afterwards, a sudden and very considerable discharge of blood, apparently from her lungs, but too plainly pointed out the nature of her complaint. It was proposed immediately to convey her to a southern climate ; but, owing to events which I need not detail, this was not done. She passed the first winter in rooms which were kept warm & of a equal temperature as circumstances would permit ; but there was a necessity for several blisters and the application of leeches. In the succeeding summer, her health and strength appeared somewhat to improve ; but at the end of the following winter she was so much emaciated and reduced by a long-continued discharge of blood from her lungs, and the effects of her feverish state, that I thought all hope of her recovery past ; and I should have been much less unhappy respecting her if she had been at peace in her grave. I had, however, the consolation to find that her physician, Dr. Wilson Philip, (whose important and singular physiological discoveries have of course, made his name familiar to every medical man,) did not despond. He pronounced decisively, that if she remained another winter in the climate of England, her death was inevitable ; but he expressed his hope and belief, that if she could be placed in a situation where she could have the benefit, during eighteen successive months, of a climate as favourable as the best part of an English summer, she would recover her health and strength, and be subsequently able to bear an English winter, though her lungs could never wholly regain their former power. Measures were consequently taken to convey her abroad ; but I found in her a settled conviction that she should go never to return, and that her remaining strength was wholly unequal to the exertion necessary.

Under these circumstances, I thought only of the best means of giving her, as far as practicable, the advantages of a warm and temperate climate at home ; and, having been much in the habit of making such climates for plants, I looked forward with some hope, though with trembling anxiety, to the result. I

stated to Dr. Philip my confidence that I could give to the air of the rooms in which I proposed that she should pass the winter, such a degree of humidity (she breathed most freely in somewhat damp weather,) as should be found best to agree with her, and any temperature, with little variation, which he should think likely to be most beneficial ; and the following plan was adopted, with (under existing circumstances,) his most unqualified approbation. A flue of sufficient power, and surrounded by an air chamber of just sufficient dimensions to permit a person to go round the flue to ascertain that no smoke escaped into the air-chamber, was constructed wholly of brick work ; space being prepared to receive garden-pots, to be filled with wetted sand, to give to the heated air the requisite degree of humidity ; and, from the top of this air-chamber, pipes of tin, cased with wood, were made to convey a warm current of air, to rise through different parts of the floor of every room into which she should have occasion to enter. She was thus given the benefit of a warm temperature,—that of sixty degrees, with little variation, as proposed by Dr. Philip, with a constant and rapid change of air. A summer temperature of eighteen months was thus given, and the result has exceeded my most sanguine hopes. The patient has perfectly recovered her health and strength, and she suffers no further inconvenience from her past illness than inability to walk briskly up hill, or to sustain any continued bodily exertion without being soon out of breath.

Particular attention was paid to prevent the temperature of the air of the bed-room of the patient from becoming too low at an early hour of the morning in winter ; that being the time at which, I have had reason to believe, patients with tender lungs usually suffer most in cold weather. It is probable that, in the case above stated, the patient was, to a great extent, benefitted by judicious medical treatment in every other respect : but upon this subject I do not feel qualified to speak.—*Med. and Phys. Journal*.

MR. WANSBROUGH'S Case of *Pertussis*.

A fine healthy child, twelve months old, was attacked with violent symptoms of pertussis. The paroxysms were so severe as to threaten suffocation. The disease had existed nearly six weeks when I was called upon to attend. Inflammation of the lungs had supervened. The child refused the breast, and was exceedingly restless and uneasy from dyspnœa. I ordered the

warm bath, and three leeches to the scrobiculus cordis, purged her briskly, and ultimately continued with antimonials and expectorants. In the course of twenty-four hours from my first visit, a considerable amendment was observed, the urgency of the symptoms being very much abated. A blister to the chest closed the active measures; and three days after, the inflammatory diathesis completely subsided. The paroxysms of the cough, nevertheless, were still violent, though the frequency of them declined with the concomitant symptoms. In short, the little patient appeared likely to conquer this formidable foe; when, unfortunately, she was accidentally exposed to a current of air, which gave her cold, and increased the cough violently during that night. I again saw her on the following morning; and, unwilling to have recourse to the former measures for her relief, I determined on applying the vapour of tar, the absence of inflammatory symptoms warranting the application. Her breathing was short and oppressed, but the difficulty appeared to arise more from accumulation of mucus in the bronchiæ than irritation. My idea was to bring the remedy in contact with the part or parts affected, and thereby expedite the effect. If, therefore, the remedy were likely to prove beneficial, the fact would be proved and illustrated by ocular demonstration. I decomposed a portion of petroleum Barbadiense, by dipping into it a red hot iron; the end of the common poker answered the purpose conveniently. The child was held over the vapour as it arose, observing not to let her inhale it until sufficiently diluted by a due portion of atmospheric air. My little patient no sooner inhaled this gaseous compound, than she exhibited manifest signs of relief. Instead of avoiding the volume of vapour as it arose from the vessel, which I feared would be the case, she willingly inhaled it, and suffered the tar to be placed almost under her nostrils. The effect was conspicuous, in relieving the pressure under which the little sufferer laboured: expectoration was promoted, and rendered nearly free from effort, by this remedy. In short, after six exhibitions of the vapour, the cough almost ceased; and without the aid of any auxiliary the child perfectly recovered.--*Lond. Med. Repository.*

DR. STOKER'S *Cases of Small Pox, subsequent to Small Pox and Vaccination.*

Case I. Miss —, resident at Rathmines near Dublin, 22 years of age, had been generally healthy excepting slight billious

complaints, to which she had been sometimes disposed, and those which will be afterwards mentioned, until Monday the 28th July, 1823, on which day she was suddenly and violently seized with fever, accompanied by præcordial oppression, mental anxiety, loss of rest, and severe pain in the back and loins. For these symptoms, leeches to the temples and active purging had been employed, under the direction of surgeon Ryall.

On my first visit, the 30th July, fever was extremely urgent, accompanied by moaning, anxious countenance, total loss of rest, hurried respiration, impeded by spasmodic pains in the stomach, tending to the back and left side of the thorax; frequent jactitation of the body, limbs, &c.; slight delirium; pulse 140, full, but unequal and irregular; tongue loaded and brown, but soft; catharsis urgent; skin hot in general, but rather cooler than natural on the feet; thirst still urgent, though somewhat abated since diaphoresis commenced. A general blush, most vivid on the face and neck, was diffused over the whole surface, and, on closer examination, a thick eruption of minute red points (such as Sydenham designates the first appearance of small-pox) was then beginning to show itself. Her parents, however, stated, that at six months old she had been inoculated by Mr. Sowan with small-pock matter, which was then succeeded by pustules on various parts of the body, and which went through their usual course. A bad sore, however, succeeded the puncture in the arm, which was a long time healing. There is now a deep and extensive cicatrix on the arm which had been so affected. There are many broad but not deep pittings to be seen, especially on the back of the neck, left by the swine-pock, which this patient is stated to have had very severely. About eight years ago she also had measles and scarlet fever. *Prescribed*.—The head to be shaved and washed with camphorated spirits of wine, a blister to the back of the neck, and the feet to be fomented by flannel and hot water; an anodyne draught at night; barley water for drink.

Second visit, 30th July.—A very restless night, but some sleep towards morning. The eruption is now elevated with deep-coloured bases. It is chiefly vesicular, but in many places pustular. It is confluent on the face, and the discoloration extends considerably over the cheeks, which are somewhat swelled; and it is diffused very generally over the trunk and extremities. No catharsis since the anodyne draught was taken. The pain of head, stomach and back, easier; pulse 120, and regular; the renal secretion scanty, crude, and turbid. *Prescribed* an enema in the evening, and eight grains of anodyne powder at bedtime.

August 1st, report.—Some rest, and feels better to-day ; pustules considerably increased in extent, and their inflammatory bases and the interstices between them of rather a higher colour, accompanied by a considerable swelling of the fauces.—Some griping, and the alvine discharges scanty, and greenish. *Prescribed*—An aperient absorbent mixture, and the anodyne powder to be repeated.

August 2d.—Slept well, and feels better ; pulse 100, bowels free ; pustules more fully matured, many of those on the face having a depression in their centres.

On the three succeeding days fever declined, and the pustules rapidly desiccated, and the scabs fell off much sooner, and left the parts underneath of a lighter colour than I have witnessed in other cases of varioloid disease. Considerable delicacy of health remained, and tendency to slight fever in the evening, for nearly a fortnight afterwards.

Case II.—Patrick Buckly, five months old, infant of a patient in Cork-Street Hospital, was (with its mother's permission) inoculated at my request by Mr. Hall the apothecary, with matter which I took from the pustules when fully matured in the preceding case. The matter was inserted on the child's arm on the 4th August ; aperient and alterant powders prescribed at the same time. On the 12th, the punctures exhibited signs of the new action produced by the virus introduced ; and on the 13th, two distinct vesicles were formed on one puncture, and three on the other ; and on the succeeding day these vesicles were farther distended and pustular, unaccompanied by any unfavourable symptoms, either local or general.

From these pustules I took matter, for the purpose of further inoculation, but have been deterred from employing it, from the unfortunate sequel of this case ; for the mother of the child having been herself for some days convalescent from fever, could not be restrained from returning home many miles from Dublin, and taking her child (which she suckled) along with her. On the 22d August, she again presented herself at the gate of the hospital for admission, having relapsed in fever, probably from the fatigue of her journey, with the child also in a high degree of fever, and covered over with the confluent pustules of small-pox. Both being placed in a ward under the immediate care of my colleague, Dr. Harkan, the symptoms went on favourably for several days, the mother becoming convalescent on the 5th day, and the child's fever gradually subsiding until the 2d September, when he was seized with convulsions, with which it seems he had been frequently attacked, having commenced soon after his birth. On the present occasion, they were suddenly fatal.

Although I conceive that the injurious effects of the journey on the child and its mother, did in this instance materially influence the succeeding course of the disease; and though possibly the epileptic attack might have been fatal, if the small-pox inoculation had not taken place, yet the event must be deemed interesting, especially in connexion with the succeeding cases, which occurred in the brothers and sisters of the young lady from whom the matter was taken. Although vaccinated, they caught the disease from her without inoculation, and had it in a much milder degree. It is also worthy of remark in this place, that surgeon Rumley of French Street, who, at my request, took matter from the pustules in the first case two days before I did, informed me that he inoculated two children with it, one of whom had been vaccinated, and another with whom no antidote had been employed; and that in neither case was there any other consequence from the inoculation, than would be produced from a similar wound from a clean lancet. The child not vaccinated, however, was attacked with measles in a few days after inoculation, and that disease went through its regular course, and was not succeeded by small-pox.

Four cases of small-pox after vaccination, or those of two brothers and two sisters of the young lady whose case is given above, may all be given under the same general description.—Their ages were 12, 14, 16, 18 years,—all had been vaccinated by Dr. Tuke, and all had that cicatrix which is generally deemed the mark of having undergone complete antidotal process of vaccination. Three weeks nearly elapsed between the sickening of the first two of these, and the convalescence of their elder sister, and nearly a fortnight more before the two last sickened.

The eruptive fever was severe and urgent in all of them, the eruption appearing on the third day: and all had numerous pustules fully matured and desiccating, and also in some of them leaving slight pitting, as in small-pox. There was no secondary fever in any of them; they all were convalescent on the seventh day, and did not require any medicine, except a mild aperient.

The observations I have to make on the cases which I have adduced, refer chiefly to the course of the symptoms in the case of the young lady first detailed, being in many circumstances similar to what has been observed when small-pox extends to those who had been previously vaccinated; such, for example, as the diminished size of the pustules, but particularly the absence of secondary fever,—circumstances which corroborate the testimony of the parents and friends of the young lady, of her having previously had the disease.

Of its being genuine small-pox, the result of the inoculation with the matter taken from it, leaves no room to doubt ; but it is very remarkable that so severe a disease was produced by the inoculation of matter from it, when it is recollected that the M^cCleods, whose cases I published in my Observations on this subject, had it in a modified form, from having caught it from those labouring under it after vaccination, although they themselves never had been inoculated with either variolous or vaccine matter.

The occurrence of an ill-conditioned sore on the part where the puncture was made in inoculating with small-pox, in the first case detailed, is worthy of remark in this place ; as perhaps it was on this account (as happens with vaccination,) that its complete and antidotal influence was interrupted. —

Such facts and observations, it appears to me, may be usefully applied in estimating the antidotal efficacy of vaccination, since it is found, that during the prevalence of small-pox epidemically, as happened in the latter end of 1820, and beginning of 1821, and also during the last ten months in this country, cases of secondary small-pox have been met with in extraordinary frequency ; and, in the same periods, the protection by vaccination is also stated to have very frequently failed. It would appear, also, from the first case reported here, as if morbid actions of the part inoculated interfered with the antidote, and farther evinced the similarity of their natures.

The practical corollary that may, I think, be fairly and usefully deduced from such facts, to which, in concluding this letter, I beg leave to call your attention, consists chiefly in the increased evidence of the antidotal efficacy of vaccination, in a very large proportion of the cases in which it is employed ; and that even in almost all the remainder, though perfect immunity from the contagion of small-pox is not always given, yet, generally, in these a much milder disease, as well as of shorter duration, is produced, than in those who had not been previously vaccinated.

These well established data fully warrant the general adoption of vaccination ; but, on the other hand, the increased numbers latterly found susceptible of small-pox after vaccination, more than at former periods, urgently demand constant attention, and fully justify the employment of tests by which the security of those vaccinated may be ascertained ; especially since it appears that, when small-pox is rife, many suffer from its baneful effects, who, relying on the security of the antidote employed, had indulged in confident feelings of security.—*Edin. Med. and Surg. Journal.*

IV. MATERIA MEDICA AND PHARMACY.

Substitute for Prussic Acid.

There are few medicines concerning which more contradictory accounts have been published, than those respecting the prussic acid. This is, no doubt, to be attributed in part to the extreme volatility of its nature, and the facility with which it undergoes decomposition, by which means it is difficult to procure it of uniform strength, or to ascertain that it is exhibited in a satisfactory condition. With a view of obviating this evil, and procuring a preparation of a less evanescent kind, MM. Robiquet and Villermé have performed a variety of experiments; the results of which have led them to propose the hydro-cyanate of potass, or the cyanuret of potassium, as a substitute in practice for the simple hydrocyanic acid. The fact of its less easy decomposition, on dilution with water and exposure to light, seems to have been satisfactorily shown; but the question whether the action of this powerful medicine upon the animal frame, when combined with an alkali, be identical with that of the pure acid, or so similar as to render it admissible as a substitute, remains to be ascertained by future observation. That this substance exerts a powerful and deleterious influence, producing death in a manner analogous to the prussic acid itself, was ascertained by the sacrifice of a number of dogs, guinea-pigs, birds, &c. which were speedily killed by it; and the general conclusions of MM. Robiquet and Villermé are as follows:

“1st. That the effects of the pure hydro-cyanate of potass, as manifested in our experiments, are similar to those of the hydro-cyanic or prussic acid.

“2d. That the employment of the hydro-cyanate of potass, prepared extemporaneously by the solution of the cyanuret of potassium, appears capable of being substituted with advantage for the hydrocyanic acid, such as has generally been used up to the present time; and that this deserves attention.

“3. That it would be necessary to ascertain whether the new medicine which we propose may not produce, upon the animal economy, other effects than the prussic acid.

“4. And that, in case of its producing others, these would require to be accurately inquired into, to ascertain whether they be hurtful or otherwise.”—(*Journal de Physiologie.*)

MR. SPRAGUE on Tincture of Tobacco.*

This tincture appears to merit attention from the recommendation of the late Mr. Noble, who was an eminent oculist at Birmingham. He says (on the application of the tincture of tobacco, to remove pain in inflammation of the eye), "I beg leave to call the attention of my readers to a medicine, the importance and value of which I have been in the daily habit of experiencing for more than ten years. It is well known, that one of the most distressing symptoms attending an inflammation of the eye, is a pain of the temple and forehead, according to the violence of the disease. This pain frequently continues for several hours; and when the head has been for a short time somewhat easier, it again returns, and the sufferings of the patient are the same as before. In the common routine of practice, no other method is taken, because none is known to remove this pain, than venesection, bleeding with leeches, or the application of a blister to the pained part, which are often inefficient; but if from half a dram to two drams of the tincture of tobacco is rubbed with the finger on the part affected, with a pressure as great as can be borne without giving pain, it will generally be found that the pain of the temple and forehead will be diminished, if not removed, in five or ten minutes, which treatment ought to be repeated three times a day." I have tried the effects of the tincture of tobacco, at the Ophthalmic Hospital, in the island of Jersey, where, after proper depletion, it was found to afford the relief described by Mr. Noble, and I have no doubt but this preparation may be applied to many other useful purposes. For the powerful sedative effects of an infusion of tobacco in purulent ophthalmia (in the proportion of 3ij. of the leaves to eight ounces of boiling water), see Dr. Vetch's Practical Treatise of the Eye, p. 211. He says, it possesses the valuable properties of acting as a powerful astringent, restraining the purulent discharge, and diminishing the œdema or external swelling of the palpebræ; at the same time that its narcotic qualities often relieve the pain, and the perpetual watchfulness which the largest doses of opium cannot subdue. The proper time for the application of this remedy is at bed-time, when the usual treatment

* R Tabaci Foliorum concisi, 3jss.

Camphoræ pulv. 3j.

Spiritus Rectificati,

Aquæ Distillatæ, aa 3iv.

Camphoram, cum spiritu vini rectificato tritura, ut solvatur, dein adde tabaci folia, et aquam distillatam. Digere per dies octo, et cola.

is to be finished by the application of the infusion of nicotiana for the night.—*Lon. Med. Repos.*

DR. CHISHOLM on the Use of Colchicum in Tape-worm.

Mr. —, a very respectable farmer (whose name and address are in the possession of the Editors,) had been afflicted with tape-worm for ten years. He had applied to regular Practitioners, and had tried the whole routine of anthelmintics with only temporary benefit; his farrier, too, “had given him turpentine enough to kill a horse,” but with the same result.— Having had a case in which the vinum colchici, given for rheumatism, brought away a considerable quantity of tape-worm I was induced to try it; and for that purpose furnished Mr. — with two ounces of the vinum colchici (made after Dr. Marcet’s recipe,) and desired him to take a tea-spoonful, in a little water, two or three times a day. On the third or fourth day he passed a large quantity of the worm, and continued to take the medicine for a week, but did not pass any more worm. He has been perfectly free from it for more than three years. It may be remarked, that he took no medicine whatever but the colchicum. I regret that I have not been able to learn if the medicine was equally efficacious in the case above alluded to.

In this case, the turpentine, given in large doses, failed in effecting a cure (though parts of the worm passed after its use,) and the colchicum succeeded. Should this medicine be found, on further trial, to act with certainty, it will be a great acquisition, as the dose is small, and the taste by no means disagreeable.—*Lond. Med. Rep.*

MEDICAL LITERATURE OF THE

UNITED STATES.

The Philadelphia Journal of the Medical and Physical Sciences,
VOL. VII. NO. 14.

ART. I. *A comparative view of the state of Medical Science among the Ancients and Moderns.* By JOHN STEARNS, M. D.
We have in vain attempted to reap some practical instruction

from this paper. It presents but a barren sketch of theories which have long since been abandoned, and an imperfect view of the state of Medical science at the present day. The causes by which its progress has been retarded, are said to be, 1st, the multiplicity of books; 2d, the too hasty introduction of new systems of physic; 3d, an anxious avidity for new remedies, and 4th, the fashionable practice of simplifying systems and remedies. These causes may have retarded the progress of Medical Science: but they have also contributed to its advancement—Nor would we adhere to old books, old systems and old remedies, till the former become more perfect, and the latter more efficacious.

ART. II. *New Division of Apoplexies.* By M. A. SERRES.

Our readers are familiar with the opinions of Mr. Serres, viz. that “apoplexies exist without effusions, and effusions without apoplexies. The sudden invasion of this disease, its periodicity often observed, its cure no longer left doubtful, the existence of coagula in the brain, without apoplexy, have been the results: in fine, the experiments upon living animals—all lead to a belief that the effusions are the effect, and not the cause of apoplexies—a very important conclusion in regard to the pathology of the brain, and to which I call the attention of observers.”

ART. III. *Cursory Remarks on Small Pox, as it occurs subsequent to Vaccination.* By GEORGE GREGORY, M. D.

ART. IV. *State of Medicine in Spain after the expulsion of the Arabs.* By DON GARCIA SUELTO, M. D.

ART. V. *A Sketch of the History of Mineralogy.* By ISAAC LEA.

To Americans the concluding paragraphs of Mr. Lea's paper must be interesting: “When we turn to our own country, we have peculiar reasons for gratification. The enlightened form of our government—our numerous liberal institutions for the instruction of youth—the easy access to collections and the facility of making them, have done much to promote the easy acquirement of this as well as other sciences. Within the last fifteen years, many valuable collections have been formed in the United States, some at a very considerable expense. Many works on the subject have been reprinted here, and some have been published that are not exotic. It is with peculiar pleasure we mention the work of professor Cleaveland. He has given us a mass of useful information that can be found in no other single work on the science. His classification is “chemical, as strict-

ly as the present state of mineralogical knowledge will permit,"* and on the whole we think it may be said, in truth, that it is the best elementary work we are acquainted with on this subject.

"The name of William M'Clure should be recorded here as the most efficient promoter of mineralogical knowledge in this country. His numerous and valuable donations of rare minerals, geological specimens and books to our public as well as private collections, entitle him to our warmest acknowledgments. His work on the Geology of the United States is too well known to be expatiated on here."

ART. VI. *Lecture on the State of the Blood Vessels in Fevers.*
By C. D. MEIGS, M. D.

In this paper Dr. Meigs has attempted to extend the doctrine of inflammation, which has been advocated with great ingenuity by Dr. W. Philip, to the phenomena of fevers. "This doctrine," says the writer, "is the waters of Jordan," and he invites us to wash seven times and be cleansed from false doctrines in fever, and promises great advantages from its adoption.

ART. VII. *Remarks on the application of the Cold Bath in the Critical stage of Country and of Bilious Fever.* By THOMAS Y. SIMONS, M. D.

In this paper Dr. Simons has recorded two cases of bilious fever, in which cold affusion was employed with advantage.—There is nothing particularly new in the practice.

ART. VIII. *Cases illustrating the virtues of Oleum Terebinthinæ in the cure of Puerperal Fever.* By ISAAC A. JOHNSON, M. D.

In this paper several cases are recorded to prove the utility of Oleum Terebinthinæ in puerperal fever. The second case, which is concisely narrated will be satisfactory to most of our readers.—

"Mrs. J. W. aged twenty-five years, on the day after her confinement, (Oct. 5th, 1820) was seized with severe pains in the head, back and abdomen, the last considerably tumefied and tender, accompanied with a total suppression of the lochial discharge—her bowels were constipated—pulse full and tense—irritability of stomach so great that the saline cathartics, though administered in small doses, were rejected. In this condition, I resorted to the oil turpentine and castor oil, in equal parts, a

* Cleaveland, p. 97.

half an ounce of which was given every hour until it operated freely. This had the desired effect—every dose was retained, and in a short time it operated freely, subduing the pain and swelling of the abdomen almost completely by the morning of the 7th."

ART. IX. *Cases of Bronchitis, with some Preliminary Remarks.*
By PEACHY HARRISON, M. D.

Bleeding, tartarized antimony, and calomel in reiterated portions, are the remedies upon which Dr. Harrison places his chief dependence. In some of the cases which he has described, he appears to have employed them with great boldness, and for ought that appears, with sufficient discretion.

ART. X. *Case of Inflammation of the Vessel from Venesection, which terminated fatally.* By N. CHAPMAN, M. D.

As soon as it became evident that suppuration had taken place in the internal surface of the vein, Dr. Chapman employed pressure, by means of a compress and bandage for the purpose of intercepting the pus in its course to the circulation. Nothing was gained by the application, and the Dr. proposes, should he ever meet with a similar case, to apply a ligature to the vein.

REVIEWS.

ART. XI. *Essays on various subjects connected with Midwifery.*
By WILLIAM P. DEWEES, M. D.

ART. XII. *An Exposition of the danger of Interment in Cities.*
By FELIX PASCALIS, M. D.

ART. XIII. *The Institutes and Practice of Surgery, being the Outlines of a Course of Lectures.* By WILLIAM GIBSON, M. D.

ART. XIV. *Eulogium commemorative of Jason O'B. Lawrance, M. D. Delivered at the request of his Class,* by SAMUEL JACKSON, M. D.